Remarks
ON
ORGANIZATION IN THE PROFESSION.

MADE AT THE OPENING OF THE NEW BUILDING OF THE NOTTINGHAM MEDICAL SOCIETY.

BY

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THERE is an organization *in* the profession and an organization *of* the profession—the one deals with the mutual relations of medical men with each other and with the public, the other is concerned with his relations to the State, and with the Faculty of Medicine in its corporate capacity. Each of us has affiliations with his university, or with one of the Royal Colleges, and is under the control of the General Medical Council, a State body, representing largely the corporations and universities, which deals with medical qualifications and has disciplinary powers. To the British Medical Association, a voluntary society, has been left the task of attempting a general organization of the profession; and it has now over 22,000 members, a magnificent home in London, a good library, and one of the largest and best medical journals in the world. There are numerous organizations, but the profession is not yet self-controlled through any one representative body, as it certainly should be in this democratic age. Just how the present conditions could be changed would puzzle Aristotle to say.

The organization about which I propose to speak, while different, is of equal importance, and is a process by which the individual is helped to get the most out of himself, and by which he can do the greatest possible amount of good in the community. Its influence is much more subtle, wide-reaching and dominant, but owing to certain inherent obstacles it is very difficult to bring about. Than medical practitioners no men need more acutely the benefits of co-operation, and yet they are notoriously difficult units to unite. Once split off from the parent college or school a majority of practitioners live lives of isolation, often indeed of great loneliness. Even in a city a very busy man may see surprisingly little of his colleagues, and what is worse he may desire to see still less. A man mentioned to me the other day that sometimes a month passed in which he did not exchange a word with a fellow practitioner. Living a buried life his motto is of necessity that of Descartes—*Qui bene latuit bene vixit.* Men react very differently to this seclusion and restraint; the best find all they ask in the intense human interest of the daily round, and against much drudgery and more discouragement they place in the balance much affection and more gratitude. It is in the very nature of the work of the medical man that he love himself last, and no matter what we may do in the way of organization, the profession never can be put on a purely commercial basis. To combine in due measure the altruistic, the scientific and the business side of our work is not an easy task. In the three great professions, the lawyer has to consider only his head and pocket, the parson the head and the heart, while with us head, heart, and pocket are all engaged. The labourer is worthy of his hire, and the man in every trade and in many callings gets the cash equivalent for the daily round, but with us this can never be so. In every department of the profession the amount of unremunerative work is, and ever must be, enormous. I do not count the public appointments, with the too often beggarly pay, nor the public service given to the people so freely in their hospitals, but the specialist and consultant, no less than the general practitioner, constantly has his heart involved, and the "good debts" of practice, as I prefer to call them—the "loans to the Lord," as Sir Thomas Browne would say—amount to a generous sum by the end of each year. As a matter of interest I looked over the records of two of the busiest weeks I ever had in practice; in one 20 per cent., in the other 15 per cent. of the patients were unremunerative, from a pecuniary standpoint, yet they were people whom it was a pleasure to be able in any way to help.

Having thus briefly cleared the ground in a statement of the attitude we should have towards our work, let me deal with the concrete conditions existing here, and, with the advantage of the ignorance of a stranger, tell you how the profession of this city and county could be organized, so as to help each man to get the best out of himself for the good of the community.

You have a city of 250,000 inhabitants and a populous county. The basis of helpful organization exists in two institutions—the Medical Society, with its library, the new home of which you have asked me to open to-day, and the General Hospital. Around these centre the chief interests of the profession, and to these alone will I have time to refer.

Of the value to the local practitioner of a medical society and of a library we are all agreed. How common the experience to enter a cold cheerless room in which the fire in the grate has died down, not from lack of coal, not because the coal was not alight, but the bits, large and small, falling away from each other, have gradually become dark and cold. Break them with a poker, get them together, and what a change in a few minutes! There is light and heat and good cheer. What happens in the grate illustrates very often the condition of the profession in a town or county; singly or in cliques the men have fallen apart, and, as in the dead or dying embers, there is neither light nor warmth; or the coals may be there alive and bright, but covered with the ashes of discord, jealousy, and faction. Like the poker bringing the elements together, the medical society may do three things. It is the most important single factor in the promotion of that unity and good fellowship which adds so much to the dignity of the profession. I have no idea of the state of the atmosphere in Nottingham—whether you are united and harmonious, or whether you fight amongst yourselves like cats and dogs—but the large "turn out" this evening suggests that the former condition prevails. In this matter, so far as my observation goes, everything depends upon the influence of the seniors, whose attitude of mind determines whether the young men grow up in a state of wretched discord or in one of pleasant comradeship. I have known a clever old Shimei, of a quarrelsome disposition, ruin the profession of a city for a generation; on the other hand, a strong old man with a good heart and a smooth tongue may keep the peace, even among Ishmaelites.

Dining in a company of doctors one day in a well-known town in the United States, I was very much impressed both by the good looks and the cordiality of three of the seniors, who had practised in the town for nearly half a century, and had always been on the best of terms; I asked them to go the next morning and have a photograph taken together for me. For a good many years that photograph has hung just above the sofa of my examining room, and is shown with special pleasure. Underneath it is written, "Behold how good and joyful a thing it is, brethren to dwell together in unity." Immunity from strife is not difficult to acquire. There are those in whom it is natural—the happy souls, born under Mercury, the Abou Ben Adhem's—"may his tribe increase!"—who love their fellow-men spontaneously; but in a great many this immunity has to be acquired, and we catch the infection of good fellowship amid just such surroundings as we enjoy to-night.

The medical society has a second great function—in post-graduate instruction. To each member it should be a sort of clearing-house of his clinical experience. It costs no little trouble to arrange an attractive programme for each meeting—a few good clinical cases, the more important pathological specimens of the week or the fortnight, and a short, pithy paper provocative of discussion. Debate should be encouraged, particularly among the younger men, and I would urge the seniors not to feel bored, as it is often the only way in which a junior can get experience in speaking. But it is only fair to demand of him the two essentials—brevity and lucidity. A third equally important function is the support of a library. You have made a good beginning, and it was a pleasure this afternoon to look over the many interesting and useful books which have been collected. Only do not try to do too much, as nowadays it is not necessary. A few good journals and the new books are all that the members should ask of the Library Committee. Special books, and the important monograph wanted by members, can be had from the library of the Royal Society of Medicine, or from the

library of the British Medical Association. It is nice to see that you have already begun to put on your walls the portraits of your distinguished Nottingham physicians, among them I see that fine pair, father and son—the Ransoms; the latter deeply mourned in his premature death. But I miss the portrait of that "strange mystical man," as he has been called, with a vast and dreamy genius—Marshall Hall—who was physician to your General Hospital before going to London. Every scrap of writing of local interest should be here, and the library should be the repository of the books and pamphlets written by Nottingham men; and all the MSS. and documents relating to the medical antiquities of the city and county. From experience in other cities I know what pride you will all take in the growth of this new home. In its present condition it is a credit to your energy and enterprise, and I think you will find that before a year is over you will double your membership, and you should look forward to having on your list every practitioner in the city and county.

Turning now to the second important factor in your local organization, the General Hospital, how may it be made of value in the education of the individual members of the profession, so that they may do the greatest possible good in the community? I know full well that there is often a little hostility on the part of practitioners to the large general hospital, some thinking that as a charity it is abused, others feeling that the men on the staff have perhaps an undue advantage in the battle. I maintain that the physicians and surgeons and specialists of a general hospital in a city of this size form the most valuable single asset of the profession, and, collectively and singly, they should be nurtured, fostered, and encouraged, and used wisely and well, by the practitioners at large. The hospital should be made the consulting centre, to which doctors bring freely that large class among which the majority of the members of the profession practise, the members of which are able and willing to pay small fees for ordinary services, but who are quite unable to meet the expenses of operation, or of the assistance of specialists. This is a perfectly legitimate use of the staff of a general hospital by the practitioner, and with the careful investigations that now are made by the almoners there is a minimum of abuse of the charity.

I wish to deal more particularly with the function of the county hospital in post-graduate education. As a class, doctors do not appreciate enough the importance of continuous education in their professional life. To be up to date a man must keep in touch with the advance guard of the profession, and this is not easy to do in any course of reading however thorough; he must come in contact with the men who are doing the work. While it is not too much to ask that a man should break away every few years from the routine of practice and go to a post-graduate school, there is another and easier way—the post-graduate school may be brought to him. Here comes in a function of the very first importance in a county hospital of this size—you can do your own post-graduate work. The Nottingham General Hospital has always been well managed. I see in the Journal of John Wesley that on February 4th, 1784, he preached the charity sermon for it, and on July 8th, 1786, he notes: "I walked through the General Hospital. I never saw one so well ordered. Neatness, decency, common sense shine through the whole. I do not wonder that many of the patients recover. I prayed with two of them. One of them, a notorious sinner, seemed to be cut to the heart." Going through the wards to-day John Wesley's comments hold good. The hospital is well ordered, neat, and clean, resembling in these points all of the English provincial hospitals. Nowhere in the world does one see tidier or more cheerful wards, and nowhere are the patients better tended. But if the general hospital is to do its share in the internal organization of the profession of each city and county, the governors and the staff will have to wake up to the scientific needs of a modern hospital, which it is not too much to say have been sadly neglected.

As we are likely to see a rapid extension of the post-graduate work, I would like to refer to the scheme which was discussed at the last International Medical Congress at Budapest, under the chairmanship of Professor Waldeyer. An International Committee has been formed for the promotion of post-graduate study. The idea is to have in different centres medical extension courses, which will enable physicians to supplement their knowledge without making heavy material sacrifices. "In large towns and cities scientific centres are to be formed as places of instruction, in which the hospitals on the spot should be made use of, and the physicians capable of teaching should act as instructors." Already in Germany, according to Professor Kutner's recent report, extension courses have been organized in more than fifty centres. Let me take an illustration: In Dusseldorf, a city of about the same size as Nottingham, courses were given in general pathology and pathological anatomy, social medicine, bacteriology and immunity, internal medicine, children's diseases, surgery, gynaecology and obstetrics, and the various specialities. There were in addition throughout the year special courses on various subjects, such as diseases of the nervous system, surgery of the abdomen, diseases of the heart, and syphilis, all free. The attendance upon the courses, held for a week or ten days, has been from 25 to 100 or more. It may be known to you that the German Government has established in a number of the large manufacturing cities academies for practical medicine, which serve as centres of this post-graduate propaganda. This work you could do in connexion with the general hospital, and with a proper organization it could be undertaken at every county hospital. It should not be difficult to induce the Government to support this scheme so far as to give a small annual grant to cover the necessary expenses of printing. The post-graduate courses could be arranged to meet the new demands; for example, in school inspection they could be co-ordinated with the various schemes of social economics at present before the community—child-saving, social purity, etc. The county hospitals furnish the machinery to carry out this work; but before it could be properly organized certain changes are essential. Money must be spent on the development of the scientific departments which are nowadays essential for the treatment of patients and the study of disease. Every county hospital should have a good pathological laboratory; a clinical laboratory, with its bacteriological, chemical, and physical departments. The new developments in bacteriological and in vaccine treatment render it imperative that all this work should be done in the hospital itself, and by men who have had thorough training. In this way an institution may extend its benefits to the practice of every doctor in the county, who looks to it for the opportunities to continue his education, and who should regard it as his chief adviser in all difficulties and worries. An increasing number of practitioners recognize that the home clinical laboratory is just as important as the dispensary, and for such men it is invaluable to be within easy reach of skilled advice.

To extend the work of the county hospitals, so as to make them centres of post-graduate teaching, would require a readjustment of the present organization; but this is not the occasion on which it could be profitably discussed. The members of the staff of the hospital have the matter in their own hands, and what I wish to urge is the responsibility that each one of you should feel to make his department a centre of information for the profession of the district. You who do the work would get the greatest good, as you will grow in wisdom and increase in value as sane advisers; the hospital would be benefited, as its influence would be helped, as working in the open, with keen eyes upon you is a great stimulus in diagnosis, and even in treatment; the general practitioner, frequenting the wards and special departments, will be able to maintain a circulation in his "grey cortex," active enough to counteract the benumbing influence of routine, in which way alone he may avoid the fate of the purely practical man, who, as so well characterized by Disraeli, practises the blunders of his ancestors. And, lastly, the public will be the gainers, as men keenly appreciative of the rapid progress in medicine will render a better and more intelligent service—the public in this will find a return for the ungrudging support which they give to the hospitals.

I have refrained from touching upon the larger organization of the profession, but I have briefly presented to you a gospel of salvation in that minor organization of the narrower circle in which you work as men and as doctors. Nor have you to go far afield—not to the Royal Colleges, not to the universities, not to the General Medical Council, not to the British Medical Association, but each one for

himself, each one for his brother, must work it out *here*. Duly used, this society is a rock of salvation against those sins of the heart which so easily beset us—mutual distrust and mistrust and jealousy, breeding discord and the strife of tongues; and duly used, the county hospital is a way of salvation from those sins of the head—intellectual apathy, complacent self-sufficiency, and the careless habits into which even the best of us are only too prone to fall.

Clinical Lectures
ON
ANATOMY AND MORBID ANATOMY IN CLINICAL SURGERY.

DELIVERED AT ST. BARTHOLOMEW'S HOSPITAL
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LECTURE I.

GENTLEMEN,—The subject of my first lecture is anatomy in clinical surgery. Anatomy is the foundation of all surgery, and I shall try to show its bearing upon clinical surgery. It is impossible for me to impress too deeply upon you the importance of a thorough knowledge of human anatomy. If you do not already possess it, I urge each one of you to study a small fragment every day. He who will read, mark, learn, and inwardly digest a single bone in the course of a week will find that, after a while, he has a splendid equipment.

I was led to choose this subject by an incident which happened in the wards but a few days ago. A youth had had his hand crushed by machinery. He had lacerated wounds on the back and in the palm of the hand. The index finger had been seriously damaged. In place of the proximal interphalangeal joint there was a gaping wound, with bone protruding. When this state of affairs was seen I naturally tried to form an estimate of the extent of the injury, and of the subsequent utility of the hand. I therefore asked the dresser in charge of the case—a gentleman who works hard and is most earnest and attentive in the performance of his duties—whether the patient could feel with his finger and thumb. This point had not been investigated, and yet the youth could not feel with either finger or thumb. Consider for a moment what consequences this omission might entail. There is now an Employers' Liability Act, and under it the patient is entitled to compensation for the damage he had sustained. But if the medical man under whose charge he happens to be is not acquainted with the extent of the injury, obviously the sufferer may not obtain a suitable recompense. Then there is the employer. He is entitled to a just and accurate report, for upon that the extent of his liability may depend. But the consequences of this omission may also be very disastrous to the medical man in charge of the case. If as witness in a court of law—and every one of you will have to testify in courts of law—he fails to display adequate knowledge, it will be harmful to his reputation. At the present moment, however, I am more interested in the psychology of this case than in its surgery; I am concerned to know why the dresser's mind did not start a proper train of thought, leading on to correct knowledge of the extent of the injury. He was not thinking anatomically. Had he thought anatomically he would have passed in review each structure. He might have proceeded from the surface of the depths of the hand, or he might have considered the structures in the order given in a familiar textbook, such, for example, as *Gray's Anatomy*. Then he would have begun by asking what injury the bones had sustained. The other day a medical friend had his hand crushed. His case was considered in anatomical order. The question of an injury to the bones was raised. He hardly seemed to appreciate the desirability of an *x* ray photograph until one had been taken, and showed that two of the metacarpal bones were broken. He held an accident insurance policy. So the bones will be passed in review, and photographed on the slightest possibility of damage. Next come the joints. An injured joint should not be overlooked: broken into, full of blood, inflamed, it may be stiff unless the injury has been recognized and movements begun early. Then come the muscles and tendons: divided tendons may require suture. A hand with ununited tendons is not of much use. Continuing the order in Gray, pass in review the arteries, veins, lymphatics, and nerves, and, where the trunk is concerned, the viscera; the cranium, with the brain and special organs; the spinal column and its nervous contents. If, gentlemen, you investigate every injury in due anatomical order, it is not likely that you will overlook any grave defect. Injuries to the limbs sometimes necessitate amputation. In deciding this question proceed again in anatomical order: estimate the amount of destruction to the skin, fascia and muscles, bones and joints, damage to the great vessels and nerves. The leg will gangrene if the superficial femoral vessels be torn. There are hardly any other channels than these to supply the lower limb with blood. I recall a little tragedy which took place very suddenly and very quietly. A man had a popliteal aneurysm. The surgeon exposed the superficial femoral artery, and when the aneurysm needle was passed between it and the vein a thin stream of dark blood ran slowly but steadily from the wound. The artery was tied, but those who saw that stream of blood knew that the vein had been injured and that the leg would gangrene, which it did. To cut off nearly all the arterial supply from the lower limb is a critical thing to do, but to injure the vein at the same time so that it fills with clot, thus obliterating the only channel for the return of the blood, is an overwhelming disaster. Then the great nerves should be passed in review. Complete division of the great sciatic nerve, taken with the other injuries, might lead you to decide upon amputation. But remember that sensation may be absent in a limb whose main artery has been damaged.

The kind of anatomy which is required in clinical surgery is not minute, but at the same time entails a correct knowledge of the limits and extent of the various cavities of the body. Given a swelling in the region of the knee-joint, the first thing to decide is whether it be inside or outside the capsule, or whether both inside and outside, with a communication through an opening in the capsule. A swelling outside obscures the anatomical structures on the outside of the capsule—such, for example, as the tendons on the inner or outer side of the knee, or the patella. But a swelling inside distends the capsule and lifts it up, together with the structures lying upon it. If you are properly acquainted with the limits and attachment of the capsules of the joints, it will help you very much to decide these rather difficult questions. After having made up your mind on anatomical grounds where the swelling is situated, then you will decide whether the swelling is fluid or solid. If fluid, you will try to decide the nature of the fluid; and if solid, whether it is the result of inflammation or of new growth.

Anatomical thinking will help you to avoid the pitfalls which beset injuries to the head. We often see a paragraph headed "Drunk or dying?" The history is usually as follows: Some one is found insensible upon the pavement. It is not known how he got there. He may have fallen, he may have been knocked down. At all events he is insensible and suffering from alcohol, or disease, or may be concussed. Concussion is a state of insensibility accompanied by shock. The boxer who is knocked out is suffering from concussion. Under proper conditions of rest and warmth, the concussed patient recovers consciousness, and proceeds to his home, or it may be to prison. There he gradually becomes drowsy, then unconscious, and dies of compression. Whenever the bony cavity in which the brain resides is suddenly encroached upon by fluids or by solids the brain ceases to perform its vital functions, and unless the pressure of the fluid or solid is taken away death ensues. This is what happens in these cases of "Drunk or dying." The injury was enough to cause concussion, but at the same time lacerated a vessel inside the skull. The blood accumulated within the skull, diminished its capacity, and compressed the brain. Now, such cases as this cannot be overlooked by those who have learnt to think in anatomical order. Every case of concussion calls for the most grave consideration, and my

house-surgeons know that if they like they can fill every one of my beds with trivial cases of concussion rather than send away one with commencing compression. Now, how does anatomical thinking prevent you from falling into error? He who thinks anatomically will investigate the patient's nervous system in order. I suppose that he may not learn much from his investigation of the olfactory nerves. My observations lead me to suppose that this must be a singularly defective sense in most people. But the second cranial nerve, the optic, may throw great light. After an injury to the head it would be, to say the least, somewhat feeble to overlook the fact that the patient had become blind in one eye. Then with regard to the third and other orbital nerves, what shrewd inferences can be drawn from a dilated pupil! Or from a slight squint. The auditory and facial would not be forgotten. The fauces would be examined, and last, the movements of the limbs. I have seen a man lying in bed with a partial paralysis of his left leg. This I suppose had been overlooked because his leg was underneath the bedclothes and because anatomy had not been applied to clinical surgery.

I have already referred to the cavities of the body, and said that it is necessary for you to know their extent and topography. I will try to tell you my own crude way of thinking over the topography of the cavities of the body, such as, for example, the antrum of Highmore, or the tympanum. There used to be a book on anatomy, written by the late Erasmus Wilson, who was such a benefactor to the College of Surgeons. And in this book, in giving the relations of the great arteries to their surroundings, the vessel is drawn with a square outline. I expect your minds are much the same as my own, and if you try to imagine the relation of one circle to another you may find it exceedingly difficult to determine whether it ought to be in front or to one side. But if you have in your mind a square, or a cube, it becomes easy to determine whether a given structure is or is not round the corner. Now let us apply this to a clinical case, such as that of a tumour growing in the antrum of Highmore. Thinking anatomically, and considering the antrum to be a cube, you will say, Does it bulge in front? This will lead you to look inside the mouth, and examine the front of the antrum. Next you will ask, Does it bulge at the back? Well, at the back of the antrum is the spheno-maxillary fossa, with the lower divisions of the fifth nerve. This will lead you to investigate your fifth nerve. Then you will ask, Does it bulge at the outer side? So you look for a swelling in the zygomatic fossa. At the inside you will not forget the nose, which may be stopped up. Below? You will look into the mouth. Above? You will examine the orbit.

Consider the tympanum in the same way. Doubtless you will begin at the outside of the cube, and investigate the external ear and tympanic membrane. Next, doubtless, you will examine inside where the internal ear is. So that you will not forget to find out whether or not the patient is deaf. The roof is a thin layer of bone and dura mater between the tympanum and the inside of the skull, and upon it rests the temporo-sphenoidal lobe of the brain, to which septic infection so often spreads. And, lastly, you will consider the front and back, and remember that at the back of the tympanum, besides the mastoid cells, are the sigmoid sinus and cerebellar fossa of the skull.

I have occupied you for some time with a subject which, although of intense practical importance, is at the same time apt to be dull and tedious. But I will not cease without referring to the anatomy of the trunk. And here I would give you a few words of advice. Learn the broad facts of topographical anatomy before you essay the minute; learn to crawl before you walk, to walk before you run. In some works on topographical anatomy the trunk of the body is mapped out like a chessboard, interesting, perhaps, to those whose memories may surpass their understanding, and whose lives are spent in the dissecting room, but not to those who have so much to learn. Let us suppose the clinical case of one who has a pain beneath the right costal margin at the upper end of the right rectus abdominis muscle, with abdominal tenderness and rigidity, vomiting, and perhaps constipation. When I demonstrated and lectured upon anatomy, I advocated the use of a few surface centres. By that I mean a centre in the surface of the body beneath which important structures are grouped. Beneath the eighth right costal cartilage is one of the important centres of the abdomen, for its centre marks the situation of the foramen of Winslow. Need I enumerate the structures grouped round the foramen of Winslow? The finger upon the centre of the eighth costal cartilage has above it the transverse fissure of the liver and all the structures in it; it has the pylorus and the head of the pancreas below it. A little to the right is the gall bladder, the gall bladder lying on the first part of the duodenum. When the gall bladder is inflamed the patient often vomits. And next, just below the tip of the gall bladder, is the transverse colon. So when an inflamed and distended gall bladder rests upon the transverse colon, flatulence and constipation ensue. Another important surface centre is a point in the right semilunar line, where it is cut by a line drawn from the umbilicus to the anterior superior spine of the ilium. Here is the ileo-caecal junction with the ileo-caecal valve, the end of the ileum, the lower part of the mesentery, and the structures in it, the caecum, the beginning of the right colon, and the vermiform appendix. I trust we all have our own ways of thinking, but I suggest surface centres to you as one of the ways of bringing your anatomical knowledge to bear upon your clinical surgery. Doubtless you will discover the other surface centres for yourselves. When I taught anatomy about nine sufficed.

Anatomical thinking is of especial usefulness in the investigation of diseases of the alimentary canal, or in connexion with those of the genito-urinary tract. Given a case in which blood or pus is present in the urine, your thinking would begin at the meatus urinarius, and pass along the urethra. I have known an ordinary gonnorhoea mistaken for nephritis because there was albumen in the urine, the urethra not having been examined. Next, the membranous urethra, and the prostatic. Remembering the prostate, doubtless a rectal examination will be made. Remembering the openings into the prostatic urethra, the vesiculae seminales will be felt, and the mind follow the course of the vasa differentia, and the testicles will be examined. Otherwise a tuberculous mass in the epididymis might be overlooked. Next the bladder will be considered, the ureters, and lastly the kidneys. A patient with much blood in the urine was supposed to have a growth in the bladder. And so she had, but something else in addition; for, when the genito-urinary tract was examined in anatomical order and the kidneys felt, a large tumour was discovered in the right kidney. It had been overlooked. I have referred to a rectal examination. In carrying out this you must, as Luther Holden used to say, carry your anatomy at the tip of the finger. Examine the anal aperture methodically, so as not to overlook a pile or fissure or fistulous tract. Then the front of the rectum, feeling for the membranous urethra, each lobe of the prostate in turn, the vesiculae seminales, the trigone of the bladder, and, last of all, at the tip of your finger, the recto-vesical or Douglas's pouch of peritoneum. Anatomical thinking would also lead you to examine the hollow of the sacrum, where enlarged lymphatic glands might be felt.

I shall now endeavour to show you some of the uses of morbid anatomy in clinical surgery. But do not think that there is any hard-and-fast line between anatomy and morbid anatomy.

Here are specimens in bottles, not very satisfactory, because they cannot be taken out and handled. Let us proceed on anatomical lines, beginning with the bones. Fractures near the ends of the long bones will be a source of great trouble and anxiety. Here is a specimen of a fracture called after Colles, an Irish surgeon. Of course you are familiar with Colles's fracture. It is a transverse fracture of the lower end of the radius. Morbid anatomy teaches that the fracture is usually impacted. What ought you to do with that impaction? Are you going to leave the impaction, or are you going to reduce it? I do not know what you are taught, but it is, to say the least, impolitic to leave one of your patients with a deformed wrist. An anaesthetic ought to be given, and the deformity put right. Have you been thinking anatomically? There is something else about Colles's fracture. The various things at the lower end of the radius will have passed through your mind, and the wrist-joint not forgotten. What happens to the wrist-joint when there is a fracture so close to it? Whenever there is a fracture in the vicinity of a joint its cavity may have been broken into. Mr. D'Arcy Power examined a large number of specimens

of Colles's fracture, and found nearly all went into the wrist-joint. A joint with a fracture into it may not only undergo a mechanical alteration but is also filled with blood. Blood in a joint causes an attack of synovitis, and that will persist until all the blood has gone, and perhaps afterwards. When you have made up your mind that the fracture has gone into the joint you will take measures to prevent that joint being stiffened by adhesions, and movements begun as soon as the pain allows. Here is another specimen of a fracture associated with this hospital. It is named after Percival Pott, one of the ablest of our surgeons. Go to the library and read the preface to Pott's works. He asks a rather curious question: "Why are people so fond of going to quacks? And why, even when the quack has maimed them, do they send their friends?" We may suppose that if a person has got well after having been to a quack he boasts about it as a tribute to his intellectual acuteness in choosing the right quack. If maimed, he sends somebody else, perhaps on the principle of the fox without a tail, or as a subterfuge to hide his own misfortune. Pott's fracture is a very grave injury. Look at this admirable specimen: the internal malleolus is broken into the joint, and the joint has been full of blood, and inflamed. If those in charge of such a case did not take care, the joint would become very stiff. When in the habit of thinking in this way you will not leave a Pott's fracture long, but think in terms of morbid anatomy, and take good care to move the ankle-joint soon.

Here is another morbid anatomy specimen, a contraction of the palmar fascia. I once had the privilege of being a colleague and friend of the late William Adams—a man of unusual courage and sagacity—and saw him working at the morbid anatomy of this disease. I commend his methods to your earnest consideration. William Adams was the first to saw through one of the long bones. He sawed through the neck of the femur, and invented for the purpose the instrument which has long gone by his name, Adams's saw. You, gentlemen, can scarcely comprehend what that meant when every one expected the patient to die of blood poisoning. Dupuytren's name was given to this affection because he was a distinguished man, and one who founded his surgery on anatomy and morbid anatomy. Before Dupuytren investigated contraction of the palmar fascia it was considered to be due to shortening of the tendons. I learnt all this from William Adams, and watched him work in the most painstaking manner to confirm Dupuytren's observations and make them his own. First he got a skilled anatomist to dissect the palmar fascia and all its prolongations; then specimens of its contractions. After Adams had made his observations he devised, from his knowledge of anatomy and morbid anatomy, the operation for the subcutaneous division of the fascia. Nowadays we should not mind whether the fascia were divided subcutaneously or by an open wound; but in those days many wounds suppurated, so that surgeons had a great leaning towards subcutaneous operations. The suppuration was thought to be due to the entrance of air. They did not know much about bacteria or of the necessity for boiling instruments. Still, they knew that a small puncture was safer than a wide incision.

When I watched this very able man's methods, it dawned upon me that morbid anatomy was the clue to clinical surgery. Morbid histology, bacteriology, and the other "ologies" are but additions.

Pott's name is also associated with the tuberculous disease of the spine, admirably shown in this specimen. Here we can see the light which morbid anatomy throws upon clinical surgery. You all know how that spine became bent. First, we may suppose that the child had tuberculous milk to drink. As Dr. Walsham has so clearly pointed out, the tubercle bacilli entered through the tonsils and adenoid tissues in the naso-pharynx. Then they passed by the lymphatics or blood stream to various parts of the body—in this instance to the cancellous tissue of the vertebrae. First the cancellous tissue became inflamed. You will have had abundant opportunities of seeing tuberculous glands in the neck. In the beginning these are swollen, tender, painful, but not very hard; and so, doubtless, are the vertebrae. Next the inflammatory products caseate, so that the bodies of the vertebrae become composed of stuff of a cheesy appearance and consistence. Plenty of caseous material is seen in this specimen. Caseation is the naked eye evidence of the presence of tubercle bacilli. You may be occasionally deceived by other forms of degeneration. Gummata look very like caseous material, also some malignant growths. Then this caseous material softens and an abscess forms. There is the morbid anatomy; what are the clinical events? At first the vertebra is inflamed. That series of joints, the spine, behaves like any other inflamed joint and ceases to move. Next, the muscles in the vicinity of the inflamed joint waste, so do those of the spine. A caseous gland ceases to be painful and becomes very hard. But the next stage—that in which the caseous material softens—has a great bearing on clinical medicine, because now, instead of the bodies of the vertebra, there is an abscess. But weight cannot be supported upon an abscess, so the spine collapses and the Pott's curve appears. One who thinks in terms of morbid anatomy will now try to find out what may have become of the pus. This may never be known; but in the ordinary sequence of events the abscess will reach the surface of the body.

Here anatomy lends us its aid. From between the bodies of the vertebrae come out the nerve trunks. The pus follows their course, and some goes backwards along the posterior division of the spinal nerve, forming a lumbar abscess. Or the pus may track down the anterior divisions of the spinal nerves which enter the psoas muscle. Therefore look for a psoas abscess. The pus may pass along the anterior crural nerve into the iliac fossa. An iliac abscess is easily overlooked unless morbid anatomy be invoked. Finally, the pus may go down the lumbo-sacral cord, along the sciatic nerve, into the gluteal region, and hence a gluteal abscess.

Next, taking the morbid anatomy of Pott's fracture one step further. Here is a specimen showing how the damage is repaired. If tubercle was a very fatal disease I suppose the inhabitants of this island would have been wiped out long ago. But the human body has great power of resisting tubercle. When the body of a vertebra has nearly all disappeared, then the process of repair begins. The process of repair in these abscess cavities is always the same—they heal by granulation. When the granulations have grown in the gap in the vertebral column they become fibrous or bony. Thus you may have seen people walking about after Pott's disease of the spine and carrying sacks of coal upon their shoulders.

Here is another specimen showing the bearing of morbid anatomy upon clinical surgery. It is a tuberculous knee. This is what happened. Tubercle bacilli entered and were deposited in the cancellous tissue of the bone or in the synovial membrane, and the joint became inflamed, stiff, and flexed, and the muscles wasted. (Note the inevitable flexion. A leg with a bent knee or hip is of little use. The bending must be prevented with splints or weights, and if it has taken place be overcome.) Then the inflammatory material caseated. The caseous material is quiet. At last the caseous material softened. Then an abscess formed, either in the synovial membrane or in the cancellous tissue of the bones. When the caseous material softens the pus may point under the skin. When opened this abscess may lead into the joint, so that in opening it be careful lest a fresh infection be implanted upon the tuberculous. If the patient resists the tubercle, and has not had septic arthritis in addition, the disease follows exactly the same course as in the spine. William Adams often pondered over articular cartilage. Why should the cartilaginous femur ossify all but two little pieces at each end? Articular cartilage never ossifies, although in osteo-arthritis its edge may thicken and ossify. So that as long as articular cartilage is present movement may return, and as long as it is present ankylosis cannot occur. But in the course of tuberculous arthritis the cartilage is removed in the manner seen in this specimen. Granulations grow from the bone, and from the synovial membrane, and eat the articular cartilage. When it has done that, and filled the space between the ends of the bone, it becomes fibrous or bony. Fibrous union is painful. The fibrous ankylosis may be firm and strong, and without movement, but it will be painful. Your object is to attain bony ankylosis, which is strong, and does not hurt. The late Sir William Savory used in sonorous phrase to say, "Fibrous ankylosis is the opprobrium of surgery." But the removal of articular cartilage and the

formation of bone is a long and tedious process. So the surgeon steps in and performs an operation founded upon morbid anatomy. He cuts this process short, and gives the patient in a little time what Nature would give after many months of suffering. Accordingly he removes the whole tuberculous synovial membrane and tuberculous bone. But he does something more: he removes the whole of the articular cartilage, puts the ends of the bone together, and keeps them there until they unite by bone.

A stricture of the urethra is, to my mind, a very good example of the way of thinking from morbid anatomy to clinical surgery. Here is a stricture of the urethra. It is in the membranous urethra, and very narrow. It might have measured 7 mm. in circumference. Do not assume that the membranous urethra is the commonest place for strictures. The commonest place for strictures of the urethra, if you examine the urethra properly with bullet-headed bougies, is in the anterior part. The person with a stricture in the anterior part of the urethra has, as a rule, a reflex spasm of the compressor urethrae. Those who are not aware of this, and who do not use bullet-headed bougies, overlook the anterior stricture, and mistake the contracted compressor urethrae for one. A good deal of what is written about strictures is not founded, as it should be, upon correct morbid anatomy, but upon very incorrect clinical observation. Think what will be the first clinical effect of that 7 mm. stricture—obviously a small stream of urine. Make it your invariable habit, when a patient has anything the matter with the genito-urinary system, to see the urine passed into a glass. That affords the opportunity of seeing the kind of stream and the urine with those significant flakes of lymph in it. Other results may follow. Not only may the stream be altered in shape, but much time be spent in passing it through such a narrow channel. A gentleman told his medical man that it took him a long time, nearly a quarter of an hour, to pass water. It was thought that, because the patient took such a long time to urinate, he must have an abnormally large quantity to pass, and diabetes was diagnosed. As a matter of fact, he had a rather narrow stricture deep down in the urethra. The late Mr. Berkeley Hill operated, and, when told what had been said about diabetes, laughed, and replied, "They often say that." But I do not think it can be a very common mistake, nowadays at least, but it is a mistake which may befall any one unless the urine is passed into a glass. Observe the next thing which has happened in this case of stricture. The urethra behind the stricture is a little dilated. What does that mean? That dilated urethra collects a little urine in it after the patient has finished micturating. That remains, and is a source of discomfort, and additionally so because it runs out afterwards and soils the clothing. And so people with stricture not infrequently smell of stale urine. Notice the next thing which has happened. The bladder is thick and small. When the human muscles, either striped or unstriped, have to do additional work they become bigger and stronger. Think what happens to a man who has a stricture which has resulted in hypertrophy of the bladder. In the first place, the bladder will not hold much. The person with a bladder like the one I hold up will pass at the utmost 4 or 5 oz. of urine at a time. But still his kidneys, we hope, are making the proper quantity, so he has to pass urine frequently. If you have seen him in the act you will know that only 4 or 5 oz. issue at a time. What next? The hypertrophied bladder is enormously strong, and the person who has a hypertrophied bladder, as soon as he has a desire to pass water has to rush off and pass it as quickly as possible, otherwise the strong bladder will shoot the urine out into the garments. But the hypertrophied bladder does not merely expel the urine through the stricture; it drives it into the ureters, which become dilated together with the hilum of the kidney. Thus one with a stricture of the urethra is in a sad plight. Before dividing the stricture learn how the kidneys are excreting. Those with incompetent kidneys oftentimes die. Unfortunately, too, a septic infection may coexist. An unboiled catheter is a dangerous weapon.

I will merely take one more morbid anatomy specimen, which is important because it belongs to a very common and dangerous disease. There is not much to be seen in this inflamed appendix. If you make up your mind that a patient has an inflamed appendix, be sure that he has some septic material in its interior, with ulceration such as this of the lining membrane, and the passage of the infection into the lymphatics, and on its way to the peritoneum. A dangerous state of affairs. A line cannot be drawn between anatomy and morbid anatomy. This inflamed appendix is situated at the ileo-caecal junction, a very critical part of the alimentary tract. Inflammation at the ileo-caecal junction disturbs the function of the whole alimentary tract. Proceed in anatomical order. Begin at the mouth to learn the clinical history. Consideration of the mouth will lead you to ask what can be eaten. Those with appendicitis commonly say that they cannot eat certain things; they will say they have had to give up fruit or vegetables. Every now and again they say they can eat anything. But most people with appendicitis have to be careful about their diet. From the mouth go on to the oesophagus, and that will remind you to ask whether there is vomiting. If a person with appendicitis vomits it means that the attack is acute. And after the oesophagus comes the stomach. Those with appendicitis often have indigestion and pain after food. Next we come to the intestines. An inflamed appendix causes blocking at the ileo-caecal valve, so that wind and faeces do not escape easily from the small intestine. Thus we find continual rumblings, because the small intestines are trying to get wind past the ileo-caecal valve. They may not be able to get it past, and so distension supervenes. Ladies with this condition may have to undo their stays. Passing onwards to the large intestine, do not fail to inquire about its functions. Those with appendicitis are often constipated. You cannot place implicit reliance on any of these signs, but proceeding anatomically you will find one or other of them is almost sure to be present. No person can have an inflamed structure in the interior of the body without general signs—alteration of temperature, of pulse, a leucocytosis, and rigors when the infection is especially dangerous. A person with appendicitis who has rigors is like one with whitlow, except that the whitlow is in the interior of the abdomen, not at the periphery of the body. Continuing your anatomical train of thought, the pelvic position of the appendix will be remembered. About 20 per cent. of those with appendicitis have the appendix on the brim of the pelvis or hanging into the pelvis, so that the inflammation can spread to the pelvic organs. First, there is the bladder: so inquire for pain and frequency of micturition. When the inflammation reaches the rectum or sigmoid there is pain during defaecation. In females there is a close connexion between the right broad ligament and the appendix, so that inflammation may spread from one to the other. Besides, the appendix may lie in contact with the right ovary and tube, so that not infrequently we meet with salpingitis or pyosalpinx. The ovary seldom becomes inflamed. Thus anatomy and morbid anatomy teach you to consider the pelvic organs in all cases of appendicitis.

IN response to an invitation from the Committee and Medical Officer of the St. Marylebone Dispensary for the Prevention of Consumption, an influential and representative gathering visited the dispensary, at 15, Allsop Place, N.W., on January 25th. The principles and methods of work were explained to the visitors, who also inspected the institution. As is well known the chief sources of infection exist in the homes. To the dispensary, which is free, patients who are not already under a medical practitioner may go for examination, diagnosis, and treatment. From the dispensary a physician and nurse visit the homes of the patients, who are thus educated in open-air treatment, and in the protection of others by the observance of a few simple precautions. The medical officer also examines all those who have been in contact with the patients, and thus the early cases are diagnosed and treated. From the dispensary suitable cases are sent to sanatoriums for cure, advanced cases to special hospitals, and children are taught the value of fresh air and sunlight. The dispensary works in intimate association and co-operation with the public health authority, and with the various charitable agencies in the borough. The dispensary is the central bureau for the collection and dissemination of information regarding tuberculosis, and the centre of scientific and philanthropic effort against this disease. The St. Marylebone Dispensary is on the lines of those already established at Edinburgh, in the Borough of Paddington, and in Berlin, Montreal, New York, Boston, and Pittsburg, and is entirely supported by voluntary subscriptions.

An Address
ON
THE TREATMENT OF GOUT AND RHEUMATISM BY RADIUM.

DELIVERED BEFORE THE BERLIN MEDICAL SOCIETY ON JANUARY 18TH, 1911.

BY
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GENTLEMEN,—When a substance possessing such striking qualities as radium becomes known, the temptation to test its therapeutic actions is very great. In this particular case there was all the more reason to do this because the substance in question, or at all events some of its derivatives, formed a constituent of certain natural curative springs, the action of which medical men had not been able to explain satisfactorily. Dautwitz, working in Neusser's clinic, first carried out the experiment of treating pathological conditions, which were included in the diseases treated by indifferent thermal springs, with baths to which radium containing uranium pitch ore had been added. Since physicists and chemists in international competition have learnt to recognize whole groups and series of radio-active substances, the primitive experiments of Dautwitz have had to be modified in correspondence with newly-acquired knowledge. As a result, it became apparent that both radium and its primary product of dissociation—gaseous emanation—were capable of producing curative effects, which were especially remarkable in the case of gout and of the various rheumatic affections. About a year ago I was able to report our results to the German Balneological Society. Since then our experience has been considerably extended, and, if you will allow me, I will deal with the results in this place afresh.

We have carried out our investigations with special care, first because we were dealing with diseases which under ordinary circumstances vary greatly in their course and the relation of cause and effect is not always apparent, and secondly, we were using an agent the extraordinary properties of which attract marked general attention, so that it is very difficult to exclude a suggestive action on the patient as well as on the practitioner. In addition, it must be pointed out that both rheumatic processes and gouty attacks are undoubtedly affected to a very considerable extent by all sorts of nervous and psychic influences. We have therefore limited our investigations, as far as possible, to patients whom we could keep under observation for a considerable time in the Charité and in private clinics, or who were under the care of especially astute and competent clinicians. In all 200 patients were treated by us; but only in 128 instances were the above-named conditions fulfilled, including 100 cases of chronic rheumatism and 28 of uric acid gout.

Chronic Rheumatism

Of the 100 cases of chronic rheumatism, 47 were improved, 29 were considerably improved, 5 nearly cured, 13 were uninfluenced by the treatment, and the result was not apparent in 6. The most interesting of these cases are naturally those in which the use of the limbs was almost completely restored by the treatment.

One of these patients was a child, 8½ years of age, who had suffered from symmetrical swelling of nearly all the joints of the extremities for nine months, and who could not use either hands or feet. After eight weeks' treatment the power of walking and the use of the hands returned. This is all the more remarkable in view of the experience that chronic rheumatism in children is prone to be particularly obstinate. Staff Surgeon Eckert, working in Heubner's clinic, has reported this case.

In a girl, aged 20 years, a subacute swelling of both ankles, which had persisted for two months, disappeared in three weeks, and she was discharged cured. In another case a subacute swelling of both astragalo-calcanean joints was cured in three weeks.

A girl, 19 years of age, had suffered from an exudative polyarthritis of the joints of the extremities for three years. Several forms of treatment were applied, but none succeeded in arresting the progress of the affection. Treatment with emanation and drinking of radium-containing waters at first produced an increase of the pain—a so-called reaction. The condition then remained stationary for a long time, but eventually yielded to continued treatment. After three months the joints were much less swollen, the patient was again able to use her hands and to walk, and, according to the latest reports received, she is now even able to dance.

The best result obtained, however, was in a long-standing case of myalgia.

Excellent results of this kind can only rarely be achieved. It is self-evident that no medicament in the world can clear up the numerous and severe anatomical changes which are met with in chronic rheumatism, and which include degeneration and loss of the cartilage, exostoses, indurated thickening of the capsule of the joint, proliferation of the synovial membrane, cartilaginous foreign bodies, contractures and indurated degeneration or advanced atrophy of muscles, and fibrous or cartilaginous ankylosis of the articular surfaces. The best results may be expected in diseases which have not existed for too long a time, and in which the chief changes are swelling and infiltration of the capsule of the joint. This form, which most frequently affects women either at an early age or about the time of the menopause, constitutes the larger contingent of the "considerably improved." In the next place, the dry form, in which the capsule remains unaltered for a long time, while the cartilage is markedly degenerated and the muscles almost always affected, yields very favourable results, in so far as the pain is diminished, the muscular contractures lessened, and the motility increased.

Myalgia.

There were among our cases several of myalgia, an etiologically obscure affection, which is characterized by tender and indurated areas in the muscles. A few of these cases have reacted in a most marked manner to the radium treatment, others were improved, and others, again, were absolutely uninfluenced. This uncertainty in the results of treatment is only too well known to the spa practitioners in Wiesbaden and Gastein. On the whole, it may be said that the younger the individual, the less advanced the illness, the better will be the results, and that even in very long-standing cases alleviation of pain may, at all events, be looked for.

Gout.

The results in gout are much more striking. We were able to observe and treat 28 patients for a considerable period. Of these, 4 remained unaffected, while in 24 a marked improvement in the condition was achieved. Some of the patients have told us that they have remained free from symptoms for a year after the termination of the treatment. The most remarkable effect is noted in the behaviour of the uric acid in the blood. We have learned from Garrod's investigations that gout is characterized by a permanent presence of uric acid in the blood, and numerous recent studies have demonstrated that the uric acid in the blood may be diminished by a rigid diet, but can never be made to disappear entirely. Under the influence of radium emanation the blood loses its uric acid within a few weeks. We were in a position to examine the blood, both before and after the treatment, for uric acid in 18 cases. In 15 the desired result was effected promptly; in a severe case of gout the blood was found to be free from uric acid after 14 days' treatment by drinking water containing radium. On the other hand, uric acid persisted in the blood of 3 patients even after a severe course of treatment. Now, it might be expected that since no salts can be deposited from blood which does not contain uric acid, no attack of gout could occur, and that any deposits which were present would be speedily dissolved. We actually did observe tophi in the ear disappear on two occasions during the treatment. But the clinical improvement did not always run parallel to the uric acid content of the blood. We noted very marked improvement in a patient who was energetically treated, in spite of the fact that the blood retained its uric acid. In another patient, who had gouty nodules all over his body, no uric acid was present in the blood either at the beginning or toward the end of the treatment, and yet the patient had one attack after another during the whole time. Experience, however, has long since taught us that it is not only the deposit of uratic salts which can cause an inflammation; a rapid solution of these salts may do the same. In the majority of cases, at all events, the radium treatment of gout is a very powerful remedy, even if some persons are refractory to the treatment.

Radium Emanation.

Before entering into a discussion of these highly interesting facts, I wish to deal with the methods which enable us to apply radium and its emanation in an effective manner. At first the radio-active material was added to a bath, on the basis of the practice at spas. Further investigations, the most important of which are those of the Brunswick neurologist, Löwenthal, have proved that the active agent is not radium itself, but the emanation which radium produces. Emanation is a gas; it cannot penetrate the epidermis of the body as such, but is readily absorbed by the lungs and by the mucous membranes of the digestive track. Emanation can therefore only act in the bath by passing out of the water into the air and being inhaled. When water containing emanation is drunk, a part of the emanation is taken up in the inspired air and another part is absorbed from the stomach and intestine. Emanation behaves like every other gas which is not a normal constituent of the body. It is excreted to a very slight extent through the kidneys and to a large extent in the expiratory air. When the treatment is carried out by baths, the absorption is only continued as long as the patient remains in the atmosphere laden with emanation from the bath water, and the foreign gas is excreted immediately. On the other hand, when it is carried out by means of drinking waters, the absorption takes place slowly from the intestine, and the body is being constantly supplied with fresh doses of emanation for three or four hours after a single dose. When the patient is given from three to five doses during the day emanation can be detected in the expiratory air at any period of the day. Radium itself behaves in the body like other heavy metals to which it is chemically related—that is to say, it is absorbed slowly, and the absorbed quantity is excreted again through the intestine. As long as it is present in the body, small quantities of emanation are continuously developed from it. It is therefore clear that the most active application of emanation is achieved when the individual is breathing an atmosphere which contains a certain quantity of radium emanation. Under these conditions an equilibrium will rapidly be established between the emanation content of the external air and that of the blood. This equilibrium will be maintained as long as the body remains in this atmosphere. The emanation content of the blood will reach a level in this way which can only be attained by the drinking of exceptionally large quantities of water containing radium. Our experiments have shown that it is usually sufficient for the purpose of obtaining definite curative results, and of ridding the blood of gouty patients of uric acid, to place the patient in an air containing from 2 to 4 "making units" per litre for two hours a day. A better result with larger doses of emanation was only attained in a few cases. "Emanators" have been constructed by Löwenthal and Gudzent on this principle. A stream of oxygen bubbles through a fluid containing a salt of radium and is saturated with emanation. The emanation issuing from the fluid is distributed equally in the air of the room by a ventilator. This method, however, has the disadvantage that it can only be applied when a special emanator is available. For this reason portable inhalation apparatus have been constructed, in which the emanation is liberated from its solution by a stream of air produced by a hand bellows. The air containing the emanation is then breathed. After a few strokes of the bellows the emanation is completely driven off from the water, and a considerable time is required before equilibrium is again established between the insoluble radium salt and the emanation in solution. In other words, the apparatus is exhausted in a few minutes, the inhaled emanation is rapidly exhaled and is diluted to such an extent in the air of the room as to be quite inactive. The portable apparatus, therefore, cannot as yet be regarded as satisfactory substitutes for the emanators.

The body is subjected to the action of emanation equably by these methods of application. If it is desired to concentrate the action on any given point, it is advisable to apply the radium salt directly to the part affected. Experiments undertaken in the Heidelberg Cancer Institute (Ramsauer and Cohn), as well as our own observations, show that a deposition of insoluble radium salts in the body develops emanation for a long period. This can be demonstrated in the expired air. Added to this action, the rays which are given off from the radium come into play, and when applied in this manner act directly on the diseased area. We have supplemented the general action with marked advantage in certain cases of rheumatism by an injection of insoluble, or repeated injections of soluble, salts of radium in the immediate neighbourhood of the affected joints. Sterile ampoules of these salts are now obtainable from several firms. In other countries, and especially in France, the action obtained by radiation of strong radium preparations has been very energetically employed, and the results which Wickham and Degrais (Paris) have achieved in skin carcinomata and naevi have justly attracted much attention. It has, however, been found necessary to check the too sanguine hopes in respect to the treatment of carcinoma. The results obtained are in some respects so remarkable that further experiments in connexion with internal diseases appear justifiable. This method of application demands special precautions in order to protect the skin from the damaging influence of Alpha rays, which are readily absorbed.

Mode of Action.

There is something unsatisfactory about a therapeutic action the cause of which is unknown and the process of which cannot be controlled. For this reason numerous experiments have been undertaken for the purpose of studying the action of radio-active substances on the processes taking place in isolated portions of the body. These experiments have revealed that the cells may be directly influenced, and under certain conditions the damage may even amount to necrosis. Radium rays, like Roentgen rays, exercise a selective action; for example, when applied to embryos they destroy nervous tissue more especially, and when applied to tumours, the pathological tissue.

The fact, ascertained in our clinic by Fofanow, that the inflammation produced by the introduction of foreign bodies (especially urates) under the skin or into the peritoneal cavity undergoes an extensive change, is of great importance in the interpretation of the curative process under discussion. The inflammatory migration of leucocytes is completely arrested. A further action consists in the activizing of ferments. Braunstein and Bergell have demonstrated this in connexion with pancreatin, Bergell and Bickel in connexion with pepsin, Richet with lactic acid fermentation, Löwenthal and Edelstein with autolytic ferments, and Löwenstein and Wohlgemuth with diastatic ferments. It is probable that the same applies to numerous other fermentative processes in the body, but not to all, for, as far as is known at present, the excretion of sugar by diabetics, for instance, is not influenced by the rays, although other metabolic processes are undoubtedly increased thereby. This can be demonstrated in a very clear manner in gout. According to the modern views enunciated by Bloch, Schittenhelm, and Brugsch *inter alia*, the disturbance in gout depends on a retardation of the purin body metabolism; and not only is the formation and breaking down of uric acid slowed, but the mutual relations of the two processes are altered. In the gouty this is evidenced by the fact that when a diet which is free from purin, but which contains nucleic acid, is given, the uric acid formed is not completely excreted within from two to five days, as is the case in healthy persons; the excretion is extended over a considerably longer time, and is not complete. Gudzent and Löwenthal were able to show that after prolonged treatment with emanation the excretion took place as promptly and completely in a gouty patient who had previously shown this phenomenon in a typical manner as in a healthy individual. In addition Gudzent was able to determine another characteristic of radio-active substances. Uric acid exists in the form of monosodium urate in the body. This salt exists in two forms, which differ from one another in respect to their solubility. When freshly precipitated from solution, the readily soluble modification is formed, which, however, spontaneously changes into the less soluble modification in the course of time. This transformation is arrested by the action of certain rays. Gudzent was further able to show that uric acid and its salts are dissociated into carbon dioxide and ammonia under the influence of this action, and he demonstrated in a very ingeniously-

planned experiment that neither radium nor emanation produces this dissociation. It is brought about by a more advanced disintegration product, which is known as radium D. It will thus be seen that very varied actions come into play in gout, all of which tend toward the solution of the gouty deposits and the breaking down of uric acid. In addition to the autolytic action, the action of inhibiting inflammation, and that of alleviating pain, which are affected in the treatment of rheumatism, there is in the treatment of gout a specific action which is directed to the uric acid and its salts, and to the processes of metabolism regulating the quantity of uric acid in the body. This ensures a greater certainty of action.

Selection of Cases.

In selecting cases for radium treatment, the form of disease should be taken into account in the first place. Before the practitioner prescribes a treatment which must be continued for weeks or months, and which will involve the patient in a considerable financial outlay, he must form a clear conception of the results which can be obtained under the most favourable conditions. He must realize that old exostoses and bony ankylosis offer no prospect of cure, and that the chances are most favourable in early stages of the process and when the soft tissues of the joint and its neighbourhood are chiefly affected. It is of paramount importance to know if the attack is due to rheumatism or to gout, because the auxiliary treatment, and above all the diet, must be absolutely different for each of these two groups of disease. I have never been able to satisfy myself that any special diet or the limitation of meat exercises a beneficial influence on the course of rheumatic affections. On the other hand a dietetic treatment of gout is essential, even in conjunction with the employment of the radium treatment. There are two sources of uric acid—the material which has to be got rid of. In the first place there is the body itself, and in the second there is the food. The dissociation of uric acid will be effected more easily and more rapidly if the second source is blocked by the selection of a suitable diet. But the differentiation of gout and rheumatism is by no means as easy as is usually believed. A typical case of gout, no doubt, is readily recognized, but the diagnosis of so-called masked gout is very difficult. A single examination of the urine does not clear the matter up. The interpretation of this form dates back to a time when it was believed that uric acid was formed out of albumen, and when gout was regarded as being due to an increased proportion of albumen persisting in the incomplete oxidation phase of uric acid. On the basis of this assumption it was held that the diagnosis could be made in any sample of urine, from the proportion of uric acid to urea. In the light of our present knowledge this is no longer tenable, since we know that the quantity of uric acid in the urine is not dependent on the quantity of albumen, but is dependent on the amount of purin-containing food taken in. It has been known for twenty years that the gouty patient excretes less rather than more uric acid than the healthy person, when enjoying the same diet, and that the uric acid value may be quite abnormally low, especially just before an attack. If the gouty nature of the illness is to be recognized from the urine, a test must be employed which Bloch, and also Schittenhelm and Brugsch, first described. This consists in putting the patient on a purin-free diet for five or six days, then giving him 10 to 20 grams of nucleic acid, and then examining whether the uric acid is completely excreted within two to five days, or whether the excretion is retarded and incomplete. This tedious test, however, is not reliable, since some gouty subjects in certain stages of their illness react like healthy persons, and, moreover, since non-gouty alcoholics and patients with nephritis also excrete slowly.

We therefore return to Garrod's old suggestion of looking for uric acid in the blood. We know, it is true, that uric acid is present in the blood of patients suffering from nephritis, leukaemia, and pneumonia in the stage of resolution, but these are conditions which can easily be excluded. Garrod employed the primitive thread test, in which a small quantity of blood is acidified with acetic acid and gently evaporated. The uric acid is deposited on linen threads immersed in the blood, and is recognized microscopically. Unfortunately this simple test is unreliable. Uric acid can only be detected with certainty by abstracting a larger quantity of blood (80 to 100 c.cm.) by venesection and by analysing it by Krüger and Schmidt's method. Since we have employed this method in doubtful cases, we have experienced a variety of surprises. We have learned that some of the very common myalgias of the neck, shoulder, and lumbar muscles are undoubtedly of a gouty nature, while other are rheumatic. Patients who reveal symmetrical and creeping inflammations of the smaller joints, which give the clinical impression of being rheumatic, have sometimes been shown to be gouty. Neuralgia, and especially sciatica, depends on this cause much more frequently than is usually accepted. It is therefore urgently necessary, in order to secure a prompt and certain result from the treatment, to examine doubtful cases in this way. It must be pointed out, however, that the detection of uric acid in the blood requires some practice and experience, and ought not to be entrusted to the pharmaceutical chemist. It is to be hoped that we shall soon discover a more handy and at the same time more reliable method of examination.

Mode of Application and Dosage.

Once the diagnosis is made, a number of factors have to be taken into consideration in the choice of method of treatment. The form of rheumatism, the duration of the affection and the number of implicated joints must be thought of, and a method of application must be chosen in accordance with the conditions. The susceptibility of the individual in this connexion, as elsewhere, varies greatly, and the physician must be guided as to dosage by the strength of the reaction and the degree of improvement. A certain amount of practice and careful observation of the course of the illness are needed to ensure a proper selection. We have obtained much better results in the Charité patients on the whole than in our private patients, whom we could only see from time to time in the consulting room.

The dosage necessitates a marked individualization. It forms at present a rather weak point in radiotherapy, because we do not possess a uniform and generally accepted system of measurement. In Germany the measurement is made partly by determining the loss of voltage—a value which varies considerably according to the construction of the measuring apparatus—and partly by calculating the "making units," which are also not quite uniform. In France the uranium unit is employed. The International Congress of Radiology in Brussels in 1910 recognized this defect and appointed a Commission, which has accepted as a unit the action issuing from 1 gram of radium. Mme. Curie has undertaken to prepare as pure a sample of radium as possible, and this is to be deposited in Paris as a standard, like the normal metre and the normal kilogram. Exact duplicates of this standard will be placed at the disposal of States interested in this question, and in each of these countries an institution is to be founded, where the standardizing of preparations from the normal measure can be undertaken. The estimation of the value of a radium preparation, even after careful application of the methods of measurement, is not very simple, and a certain industry appears already to be profiting by this uncertainty. It can, however, be carried out with comparative ease, since the content of active substance cannot be calculated by any attribute other than the application of definite methods of measurement.

In spite of the many valuable articles already published, we are still at the beginning of the investigation of the therapeutic action of radium. The extension of the results obtained up to the present, the further studies of the effect on metabolic and secretory processes, and the differentiation of the action of the various forms of rays are all problems of the future. A powerfully radiating member of the thorium group—*mesothorium*—has been prepared in considerable quantities by Professor Otto Hahn, and requires to be tested bio-therapeutically. A large quantity of this substance has just been prepared for the Königliche Akademie der Wissenschaft (in Berlin), thanks to the generosity of Herr von Böttinger. As compared with radium, the want of durability of this preparation is amply compensated by the greater ease with which it can be obtained from raw material. It is extremely probable

that other radio-active substances will be discovered in time, and it is quite possible that they will reveal a variety of peculiarities as regard both their physiological and therapeutic actions, and their selective behaviour. A wide field of activity lies in front of us, and there is urgent need of a special institute which will deal exclusively with these therapeutic biological investigations.

But I must return from the hopes of the future to the actual subject of my discourse. I hope that I have convinced you that in radium and its emanation we possess, not a panacea for all ills, which would restore suppleness and power in the most severe and incurable cases, as by magic, but an extremely valuable and indispensable means of treatment—a means which, in combination with the already known methods of treatment, enables us to achieve highly satisfactory and gratifying results in two groups of disease, which have in the past been a trial of patience both to the practitioner and to the patient, on account of their obstinacy and their persistence.

A FURTHER NOTE UPON THE MECHANICAL EFFECTS OF A RIGHT-SIDED PLEURAL EFFUSION.

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IN the BRITISH MEDICAL JOURNAL of June 11th, 1910, a note upon the mechanical effects of a massive right-sided pleural effusion was published by the present writer.

More recently, further opportunities of studying the mechanical effects of the accumulation of fluid in the right pleural cavity have presented themselves. In the new case the subject was a male of middle age whose body had been preserved by the injection of 15 per cent. formalin which had firmly fixed all the tissues.

The amount of the effusion had been by no means so great as in the case formerly reported, and though the displacements discovered on section and dissection are less striking than those described by Professor Elliot Smith[1] or by the present writer in cases of massive effusion, they are sufficiently well marked to show clearly the general lines along which the effects of abnormal distension of the right pleural sac manifest themselves. Indeed for purposes of clinical work they are of greater value than those formerly described; for, in this case, the accumulation of fluid had not been so great that it might not well have been met with in normal practice.

GENERAL DESCRIPTION OF THE CONDITION FOUND.

1. The right pleural cavity is full of coagulated fluid. Its capacity is considerably increased. This is due to:

(*a*) The fixation of the ribs in the position of forced inspiration (see Figs. 1 and 2).
(*b*) The displacement of the mediastinal structures towards the left (see Figs. 1 and 2). The displacement is most marked at the mid level and least marked at the top and bottom of the mediastinum. In other words the mediastinum is bowed towards the right.
(*c*) The opening up, to an abnormal degree, of the normal pleural recesses which extend in behind the oesophagus and trachea and in front of the superior vena cava and aorta (see Figs. 1 and 2).
(*d*) The downward displacement of the diaphragm (see Fig. 4).

2. The right lung is not collapsed and is not adherent to the chest wall nor is there adhesion between the lobes (see Fig. 2).

3. The horizontal curvature of the aorta is somewhat flattened out so that the ascending portion lies almost entirely to the left of the median plane (see Figs. 1 and 2).

4. The trachea is displaced slightly towards the left and is rotated on a vertical axis so that the right bronchus has passed forward (see Fig. 2).

5. The oesophagus is curiously crumpled by the pressure of the distended right pleura, and is slightly displaced to the left (see Figs. 1 and 2).

6. The left lung is compressed, and is, in its lower part, adherent to the chest wall.

7. The superior vena cava is somewhat compressed laterally, and is displaced towards the left. Its lumen is seriously reduced by the pressure exerted upon it, from behind forwards, by the right pulmonary artery, which has in turn been pushed forward by the right bronchus (see Figs. 2 and 3).

8. The ascending portion of the vena azygos major is pushed into the median plane; the portion which normally arches over the root of the right lung is pulled out to lie in a horizontal plane, and is bent very sharply against the right postero-lateral edge of the trachea at the level of its bifurcation. At the point of bending the lumen is entirely occluded (see Fig. 2).

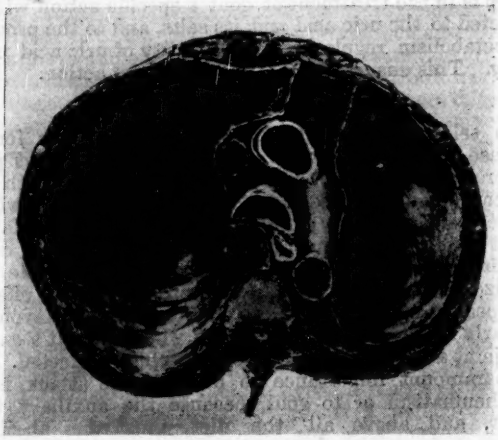

Fig. 1.—Horizontal section of the thorax at the level of the manubrio-sternal articulation: looking upwards. *To show* the increased size of the pleural cavity, the flattening out of the transverse arch of the aorta, the crumpling of the oesophagus, and the partial rotation of the trachea.

9. The inferior vena cava is much dragged upon; the caval opening in the diaphragm shows the effects of this by its distortion into a pear-shaped orifice (see Fig. 4). The intrapericardial part is sharply kinked, and its lumen is almost entirely occluded (see Fig. 3).

10. The heart is rotated clockwise round an antero-posterior axis passing through the caval orifice in the diaphragm, so that its apex descends and forces down the cardiac area of the diaphragm (see Figs. 3 and 4). The

Fig. 2.—Dissection of the superior surface of the lower portion of the thorax removed by the section through the manubrio-sternal articulation. On the right side the superior surfaces of the middle and inferior lobes of the right lung are exposed. *To show* the pushing forward of the right lung root, the rotation of the trachea, the crumpling of the oesophagus, the kinking of the vena azygos major against the right posterior margin of the trachea at its bifurcation, and the pushing over of the superior surface of the heart towards the left.

posterior wall of the right auricle is pushed forward by the lung root and overhangs the opening of the inferior vena cava. The cavity of the right auricle is further reduced by the direct pressure upon its right lateral wall. The left ventricle is fixed in a position of diastole.

11. In the abdomen the liver is depressed and flattened, and the superior aspect of its left lobe is deeply indented by the cardiac depression of the diaphragm; the kidneys, more especially the right, are depressed and deformed by pressure; the suprarenals are also depressed.

The points of greatest interest demonstrated in this dissection are undoubtedly those connected with the

distortions and compressions of the great veins as they approach the heart. Rotation of the trachea round a vertical axis and carrying forward of the right lung root, which are the result of the opening up of a retrotracheal pleural recess, have not apparently been recognized as changes likely to lead to the partial or complete occlusion of the lumen of the superior vena cava. The mechanism of the occlusion of the vena azygos major, as demonstrated

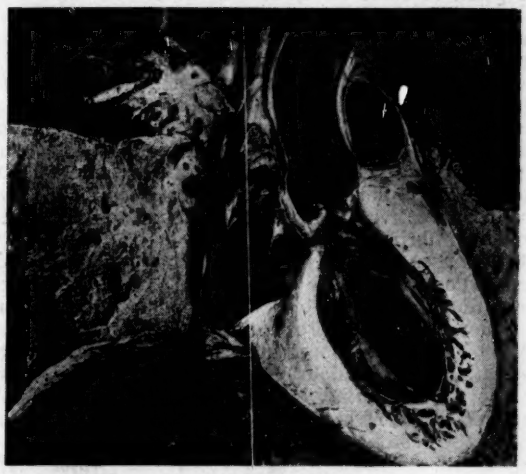

Fig. 3.—Coronal section through the heart on a plane ½ in. anterior to the anterior lip of the inferior vena caval opening. *To show* the kinking of the inferior vena cava, the downward rotation of the apex of the heart (slightly exaggerated in the photograph), and the bowing of the mediastinal structures. The white line is vertical, but on a plane a short distance to the right of the middle of the body of the last dorsal vertebra. It passes through the left margin of the inferior vena caval opening, round which point the rotation of the heart occurs. (See Fig. 4.)

in the dissection described above, is interesting, though possibly not of great clinical importance. The almost complete occlusion of the inferior vena cava resulting from the downward rotation of the apex of the heart

Fig. 4.—The inferior surface of the diaphragm. *To show* the flattening out of the right cupola and the depression of the cardiac area of the diaphragm and the distortion of the inferior vena caval orifice, which has been dragged out towards the left.

and the great diminution in the capacity of the right auricle under the influence of pressure are facts of clinical importance.

As a result of the consideration of the cases now and formerly described the present writer is confirmed in his opinion that one cause of sudden death in cases of right-sided pleural effusion may well be occlusion of the great veins as they approach the heart, and more especially occlusion of the inferior vena cava. This matter was referred to more fully in the short paper published on June 11th, 1910. The suggestion is not a new one, although it has not received general acceptance at the hands of the physicians.

A further point of interest is well brought out in Figs. 1 and 2. In these the descending thoracic aorta is seen to have been pushed clear of the left side of the vertebral bodies. This fact may provide a partial explanation of the "area of dullness" which exists on the left side of the vertebral column in cases of right-sided pleural effusion.

My thanks are due to Mr. William Gill for the photographs from which the illustrations are taken and for assistance in the dissection.

REFERENCE.

[1] Elliot Smith, On the Displacements produced by Pleural Effusion, *Lancet*, September 28th, 1907.

THE TREATMENT OF THREE HUNDRED NAEVI BY FREEZING.

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EXCELLENT as are some of the final results of treating naevi by means of radium, the method is, nevertheless, far from rapid and is beyond the means of many patients. For naevi in certain positions, such as those of the eyelids which involve the conjunctiva, radium has perhaps some advantages over other methods of treatment, and will still be used; but in the vast majority of cases equally good results can be obtained far more quickly, certainly, and cheaply by the application of solid carbon dioxide. Where the naevus is superficial a single application for a few seconds will effect a cure, and the resulting scar is so inconspicuous that it is difficult even to detect. The great majority of the cases which I have treated have been, naturally, children, many of them only a few weeks old, and in such patients the painlessness and rapidity of any method of treatment is of great importance. The application is, of course, cold, and a tiny baby will probably cry, but I doubt if it feels any pain, and older children will talk and laugh while they are having several naevi, warts, or lupus nodules treated by this method. They say there is some feeling of burning or smarting while the tissues are thawing, but this very soon passes off. When a well marked, definitely raised and circumscribed angioma has to be treated, a single application is seldom sufficient, and I very much prefer to do too little at the first application rather than too much, especially if the buccal mucous membrane or an eyelid is involved. But even if several applications are necessary, it must be remembered that the inconvenience to the patient is very slight, no anaesthetic is necessary, and no dressings beyond some boracic powder or boracic ointment are required. For naevi on the face there is no question that this method is far preferable to any surgical operation; for naevi on the trunk it might be said that excision was equally good and that the scar does not matter; but I have seen a considerable number of such scars in which naevoid tissue has been left or has recurred, and where either a further excision or treatment by solid carbon dioxide was necessary.

I have successfully treated with carbon dioxide 300 naevi of various extent and size. Most of these naevi were a source of disfigurement, many of them being on the face; but some of them were in positions where only a sentimental feeling on the part of the parents, and no cosmetic necessity, seemed to make their removal desirable. Such were naevi of the vulva, of the penis, and of the margin of the anus, and they were interesting from the point of view of the possibility of sepsis; but I have not seen one in these positions which gave any trouble or failed to react in the ordinary way or heal up normally. Most of these cases were treated by me at the Queen's Hospital for Children, and included capillary, stellate, cavernous and pigmented naevi, some small and some several inches in diameter, flat, or markedly raised above the adjacent healthy skin forming prominent red or purple swellings. For all such cases treatment by solid carbon dioxide cannot be improved upon, but for large port-wine stains, involving part or the whole of one side of the face, where a considerable area has to be treated at a single application, I prefer to employ liquid air. In the liquid state air occupies $\frac{1}{800}$ part of its ordinary volume; in other words, if liquid air be vaporized it will expand 800 times, and as the more

volatile nitrogen evaporates the temperature rises and the almost colourless liquid assumes a bluish tinge—the colour of liquid oxygen—which remains until all the liquid has vaporized. Liquid air boils at 190° C., so its use is especially adapted to those cases where a maximum rapidity of action is necessary, and the maximum degree of cold is required in the minimum time. For a port-wine stain or large capillary naevus an application of 5 to 7 seconds is sufficient, for cavernous naevi 8 to 10 seconds. Its mode of action is very similar to that of solid carbon dioxide.

Carbon dioxide has a critical temperature of +31.30° C., a boiling point of −78.2° C. when solid, and a melting point of −56.2° C. When solid it can be moulded into pencils or sticks of various sizes and shapes, so as accurately to fit any small naevus; thus a lesion no bigger than a pin's head can be frozen and removed without the slightest involvement of healthy skin. Naevi of the size of a five-shilling piece can also be treated with a single application, and any lesion between these two sizes, however irregular in shape. For larger lesions two or more applications, approximating but not overlapping, are necessary. The immediate effect of the application on the skin is to make it perfectly hard and white, depressed below the surrounding skin proportionately to the amount of pressure which has been applied. This pressure must not, where soft parts underlie the angioma, be greater than that required to press the blood out of the superficial vessels, and the surface of the skin must be held as tense as possible during the application; where bone immediately underlies the lesion somewhat firmer pressure may be made, remembering that the depth frozen depends, other factors being the same, upon the amount of pressure applied. The duration of the application varies from twenty seconds for a superficial plexiform angioma to forty seconds for a cavernous angioma, while warts, which are bad conductors of cold, require as much as sixty seconds. The time required for thawing is rather longer than that for freezing; the skin then feels firmer, due to secondary hyperaemia and extravasation of serum, and within an hour or two a vesicle forms. Unless the application has been extremely short this vesicle does not become absorbed, and if not repeatedly punctured with aseptic precautions and drained it becomes infected. If possible, therefore, the fluid should be evacuated aseptically each time the vesicle or bulla fills up, and a pad of sterilized cotton-wool is under such circumstances all the dressing required. When, however, such draining of the bulla cannot be carried out efficiently, a dressing of zinc ointment dusted over with zinc and starch powder should be ordered and the patient told not to remove the impetiginous-like crust which forms, but let it come away of itself. This takes place in about ten days, and a delicate, smooth, and supple cicatrix forms, which is at first pink, but later becomes paler and paler until it is almost invisible. The resulting scar may at first be slightly depressed below the surface of the surrounding skin, according to the nature of the lesion which has been treated and the extent of the freezing; but the scar is finally of the same tint as the healthy skin, equally soft, and practically inconspicuous.

In the case of cavernous and pigmented hairy naevi and raised localized angiomata excellent results are also obtained, but more than one application is usually necessary, and the scar, although fine in texture and supple, is more conspicuous in proportion to the depth and extent of the original lesion and the number of applications made.

I have also applied this method of treatment with success to lupus vulgaris, lupus erythematosus, warts, rodent ulcer, and old-standing patches of psoriasis and lichen planus. The duration of the application varies in the different cases, but the cutaneous reaction is similar to that already described in the case of naevi.

The histological changes in skin which has been frozen with carbon dioxide have been investigated by several observers, and more particularly by Juliusberg. If normal skin is frozen, and then immediately excised, sections of it show no pathological changes except thrombosis of the cutaneous vessels. If, however, normal skin is frozen hard for thirty seconds and excised fourteen hours afterwards, and hardened in 10 per cent. formalin solution, sections show a similar thrombosis of the blood vessels, the thrombi being either hyaline or composed of leucocytes, erythrocytes, or both. Round the vessels is a well-marked infiltration of leucocytes. The lymphatics are dilated and filled with coagulated, homogeneous masses. Such sections show, however, the most marked changes in the epithelial layer, the cells of which appear structureless and homogeneous, and the nuclei are clear and, with the exception of some nuclei of the basal layer, do not stain. It is well known that at a temperature below 4° C. water expands, and this expansion might, in the case of the epithelial cells, lead to rupture of the cell membrane and the katabolic appearances seen in the sections. Beneath the epithelium is found a layer of large polynuclear leucocytes, which also infiltrate the connective tissue, while the connective tissue cells are swollen and hypertrophied. The elastic fibres are unchanged, but, if the section is stained with Weigert's fibrin stain, the whole connective tissue layer is found to be full of fine strands of fibrin.

It has been conclusively proved that neither liquid air nor solid carbon dioxide destroy the pathogenic properties nor inhibit the activity of micro-organisms, and this must be remembered when treating lupus and rodent ulcer.

Various forms of apparatus have been devised for the manufacture of suitable crayons or sticks of solid carbon dioxide, the essential being that the crayons shall be coherent, hard, of sufficient size, and readily moulded or cut to the desired shape. The necessary hardness—the crayon should sink when thrown into water—can be obtained by compressing the snow in a mould by a heavy rod cut to fit the mould, or by a plunger with a screw thread which is screwed down on to the soft snow until it is of the consistence of ice. With such an apparatus the solid carbon dioxide can be made nearly transparent, and the point of the cone moulded to any shape required.

CARCINOMA OF THE STOMACH IN A YOUTH OF NINETEEN.

BY

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THE occurrence of carcinoma in young persons is always a rarity, and I therefore give a short report of a case of a youth of 19 in whom it was present. The growth in this instance was situated in the stomach, and, owing to its proving fatal while the patient was under observation, its true nature was investigated after death. The patient was treated on two occasions in University College Hospital, but a definite diagnosis, it must be admitted, was never made until after death. The reason for this was that, although the symptoms and signs were on the whole those usually associated with malignant disease of the stomach, owing to the patient's youth he was at first thought to be suffering from abdominal tuberculosis. Towards the end of his illness, however, it was supected that something more serious than an inflammatory condition was present in order to produce such urgent symptoms.

Clinical History.

J. J. D., just 19 years old, a french polisher by trade, came under treatment on October 24th, 1909, for pain in the stomach, lasting eight weeks. The pain generally started half-way through a meal, and lasted for about three-quarters of an hour, subsequently passing off. Until two days before he was first seen he had taken ordinary food, but since then had been on a milk diet, and had been to some extent relieved thereby. He had had bilious vomiting on one occasion only, but suffered much from flatulence. He had noticed something "like a bubble" pass across his stomach, the sensation lasting a few seconds.

It was interesting to find, on further questioning, that he gave a most accurate account of peristalsis, which had, apparently, been visible sometimes.

The appetite was bad, and the bowels constipated. He was a teetotaler and a non-smoker, with no past or family history of importance.

He was wasted and anaemic, with a pulse of 96 and a temperature of 100°. Except for a few moist sounds at the right base, there was nothing of importance in the chest. The abdomen showed slight distension, and on palpation had a generalized "doughy" feel, with no evidence of free or encapsuled fluid. In the epigastrium there was marked tender-

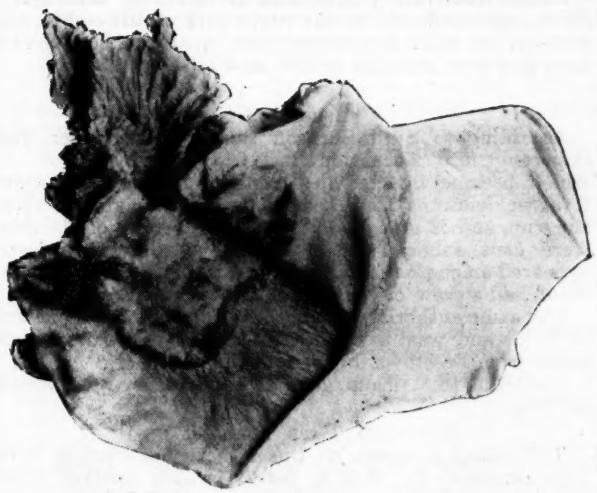
ness, and a definite edge could be felt to descend during inspiration. Elsewhere there was no abnormal tenderness or mass. There were no signs of tubercle to be found in other parts of the body.

Shortly afterwards an indefinite tender mass made its appearance in the epigastrium, its lower border corresponding with the sharp edge previously noticed. During the first fortnight there was a slight nocturnal rise of temperature, but afterwards this subsided and remained normal. As the condition was considered to be one of abdominal tubercle, the ordinary hygienic treatment was adopted, and, throughout his stay in hospital (about three months), he slowly and steadily *gained weight and lost all symptoms*. He was eventually sent to a convalescent home. Soon after his return, however, the same symptoms recommenced and became aggravated. In addition he lost weight more rapidly. He was readmitted on May 9th, 1910, having vomited some dark matter on three occasions during the two preceding days.

He was then desperately ill, very anaemic and emaciated, with a subnormal temperature and a rapid running pulse. The abdomen was very wasted, with an area of distension corresponding to the stomach, and a large tender mass felt in the epigastrium. The area of gastric resonance was much enlarged and, in addition to the large mass, a smaller discrete and harder one could be felt in the region of the pylorus. Well-marked visible peristalsis could be seen over the distended area. No other abdominal viscera could be felt, and the urine was normal. Owing to the inability to take food by the mouth, rectal feeding was resorted to, the preliminary wash-outs containing altered blood. Haematemesis commenced again three days later, and the general condition very soon became hopeless. A blood count showed extreme anaemia the red count being reduced to 2,300,000, and the haemaglobin 25 per cent. The patient died on the 25th, a thrombosis of the veins of the left leg having occurred a few hours beforehand.

Necropsy.

All the organs, except the stomach and liver, were found normal. The stomach was greatly dilated, but the external



surface appeared normal. Situated over the lesser curvature near the pylorus was a large oval ulcer extending for three inches on to both anterior and posterior walls. The ulcer was shallow, its base white and slightly uneven, but not markedly indurated. The edge was formed by a prominent sinuous ridge of infiltrated mucous membrane, a little everted and very indurated. Immediately above the pylorus, outside the stomach, was a large hard mass of glands. By the infiltration of the tissues at this spot the first part of the duodenum had been drawn towards the lesser curvature, and kinking with obstruction had resulted. The pylorus itself was not involved, and admitted the finger readily. A small nodule of growth projected into the first part of the duodenum underneath the mucous membrane. The gastric glands were enlarged and indurated. The liver was enlarged, its substance fatty, and scattered throughout it were numerous secondary deposits, the superficial ones having a typical umbilicated appearance. The vena cava was free from growth. There was a large adherent and friable clot in the left external iliac and surrounding veins. A microscopic section at the time showed the ulcer to be a columnar-celled carcinoma.

A photograph of the primary growth is reproduced.

As regards the age incidence of cancer of the stomach, Perry and Shaw in their series found the average age at death to be 52.1 years. The most fatal decade is, no doubt, between 50 and 60, and the disease is certainly infrequent before the fourth decade. Among the cases recorded before the twentieth year are Norman Moore's in a girl of 13, and Schäffer's in a boy of 14. Osler and McCrae, in a large series, found as many as thirteen between the ages of 10 and 20. Cullingworth describes a case of cylindrical-celled carcinoma of the stomach in an infant of 5 weeks, Finlayson in a child of 3½ months, and Kaulich a "gelatinous" carcinoma in a boy of 1½ years.

Two cases of what was said to be congenital carcinoma of the organ have been described by Wilkinson and Widerhofer.

The percentage of cases occurring in the first *three* decades, as worked out by Schäffer, Reichert, and Bräutigan, only amounts to from 2 per cent. to 3 per cent., and of these by far the largest proportion occur between the ages of 20 and 30.

One of the chief points of interest in this case is that it illustrates how misleading the abnormal age incidence of a disease may be in coming to a correct diagnosis. Lastly, the temporary improvement, with proper medical care and nursing in the earlier stages of the case, is remarkable.

THE HISTORY OF YELLOW FEVER IN WEST AFRICA.

BY

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(Continued from page 185.)

IV.

YELLOW FEVER IN THE GAMBIA.

It is most probable that yellow fever appeared in the Gambia at the same period as in the case of Sierra Leone and in Senegal, for epidemics in North-West Africa appear to have been on most occasions in the past widespread, sometimes starting in one colony, sometimes in another, but usually ending by affecting all three—Sierra Leone, the Gambia, and Senegal.

The period embraced by these epidemics and sporadic cases extended from the end of the eighteenth century through the nineteenth up to the present epoch.

Outbreaks have been recorded in 1768 and 1769, 1842, 1845, 1852, and in 1878, when the fever is stated to have been severe. During this period it will be remembered that the ships of the mercantile and royal navies were perpetually infected with yellow fever, and that therefore the disease could be imported in any year until it became endemic. Of course the disease might have been endemic from a much earlier period, but as colonization only set in in the eighteenth century it is impossible to know what happened before this date, for here, as elsewhere, it was only by the arrival of non-immunes that the world was made aware of the existence of the disease.

We may reasonably suppose that the *Stegomyia* existed in the Gambia in early times just as it does to-day.

In 1837 Fergusson describes an outbreak of yellow fever in the Gambia, imported so he believes, by H.M.S. *Curlew*, which sailed from Freetown, where it had remained one week, and during an outbreak members of the crew contracted the disease, and when the ship arrived in the Gambia the sick were taken ashore and the disease spread amongst the residents. The Colonial surgeon died from it. In the same year yellow fever was present in Senegal.

From the annual report of the West African station, it appears that 4 cases of yellow fever occurred, of which 2 proved fatal, in the garrison in the period 1841–2.

In 1878 a severe epidemic is stated to have occurred, but so far I have been unable to come across an account of it. It was also present in Senegal in this year.

In June, 1900, 9 fatal cases of yellow fever were reported officially from the Gambia. It was present in Senegal.

Bathurst was declared an infected port in June, 1901, also Senegal.

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V.

YELLOW FEVER IN SENEGAL.

The history of yellow fever in the French Colony is comparatively very complete, numerous French authorities of eminence having carefully described the various

epidemics. As in the case of Sierra Leone, so in this Colony, the history of the disease is coincident with white colonization and commercial advance.

Outbreaks of sporadic cases are recorded in 1768, 1769, 1778–9, 1814, 1816, 1828, 1830, 1837, 1840, 1841, 1845, 1846, 1852, 1858, 1863, 1866–7, and 1872. The symptomatology of very many of the outbreaks has been carefully recorded by Bérenger-Féraud, so that there is no doubt about the nature of the disease.

From the year 1830 yellow fever, however, attracted the attention of numerous observers, and, as in the case of the other West African Colonies, the symptomatology is given with care, so that here, again, there is no doubt about the true nature of the disease. Schotte, in describing the great epidemic of 1778–9, states that fifty-nine whites died; that the deaths were most frequent amongst the whites, next in frequency amongst the mulattos, and least often amongst the blacks. The symptoms were: intense headache and lumbar pain, congestion of the eyes, obstinate vomiting or hiccough, black vomit (coffee-ground-like material), urine greatly diminished or total suppression, delirium, coma and death. Frequently the very characteristic and often fatal symptom of "feeling better" occurred towards the termination of the illness. From 1778 to 1814 no large outbreak occurred, then in 1816 the disease broke out at Cape Manuel. From 1817 to 1830 Schotte considers there were numerous sporadic cases. In 1830 a widespread epidemic occurred which affected Gorée, Saint Louis, and Dakar.

In 1837 the disease again broke out in the island of Gorée, introduced, as it was thought, by some from Bathurst; Bathurst had meanwhile attributed their own outbreak to infection from Freetown (see Sierra Leone).

From 1837 to 1859 there is an apparent absence of recorded outbreaks. Then in 1858–9 the disease again attracted attention. Again, from 1864 to 1867 there are records of small outbreaks.

In 1872 a severe epidemic occurred which spread from Gorée to Saint Louis, and then to Bakee in the Upper Senegal. That is to say, the disease now showed its characteristic tendency to penetrate into the interior from the coast, following the trade routes. The writers of the period also state that up to this date yellow fever was usually regarded as imported from Freetown or the Gambia. But after 1872 authorities were disposed to admit its endemic origin.

In 1878 an outbreak is recorded, and it was stated also to be present in 1897.

From 1900 to 1906 there is an annual record of cases. In 1900 quarantine was officially declared, and Dakar, Gorée, and Conakry were declared infected ports. The 1900–1 outbreak has been made the subject of more than one monograph. Kermorgnant states that there were 146 cases and 225 deaths, and describes how it spread up into the interior and along the railroad from Kayes to Dioubeba in the Soudan. Bérenger-Féraud has also written the history of the epidemic. Both authorities mention how the disease was considered by many as endemic in Senegal. The possibility, however, of the ever-shifting Syrians having introduced the disease is also mentioned.

In 1902 a recrudescence of the disease is recorded in the Soudan and Upper Senegal.

In 1904 Dakar is declared to be an infected port.

In 1906 yellow fever breaks out at Bamaku in Upper Senegal, and at points along the Kayes-Niger Railway; the first case appeared to start in Segou in the Soudan.

An official communication from the British Consul-General in Dakar states that yellow fever was present in 1906 during the months of September, October, and November in the Upper Senegal and Niger Territories. Thus, in Senegal there has occurred an advance of yellow fever from the coast into the interior following the railroad and trade routes; this same phenomenon has repeatedly occurred in Central America (see my Honduranian report), and will be repeated in Nigeria and in the Gold Coast colonies unless preventive measures are taken at once. This year the disease has penetrated to Saw Mills on the Gold Coast, and there are as yet not sufficient protective measures enforced to prevent it spreading to either the tin-mining centres in Nigeria, to Tarquah and Obuassie, the gold-mining centres on the Gold Coast.

The interior of a country offers no protection from yellow fever.

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VI.

YELLOW FEVER IN ASCENSION, BONAVISTA (CAPE VERD ISLANDS), AND FERNANDO PO.

The interest attaching to yellow fever in these islands is mainly from the historical point of view. They were ports of call for the West African ships in the eighteenth century, so that ships with yellow fever cases on board arrived regularly every year. The medical authorities of the period differed as to whether the yellow fever which did occasionally break out in epidemic form was imported or of local or endemic origin. Of course it would be difficult to settle that question now, as both views were readily possible, but at the time they gave rise to bitter controversy.

On the whole, the evidence is in favour of the disease having been endemic in the early part of the eighteenth century, or even the seventeenth century. Outbreaks have also been recorded in 1863 and 1868.

ASCENSION.

According to Staff Surgeon Barry, yellow fever was imported into Ascension in 1823 by H.M.S. *Bann*, which became infected in Freetown during the yellow fever epidemic of 1823–4. Yellow fever broke out upon the ship, and 32 men died; the sick on arrival of the ship were sent ashore, and a few days afterwards fever appeared amongst the garrison, and of these 17 died. The *Bann* had a crew of 130, and of these 38 perished.

The same authority states that yellow fever broke out in 1838, and was, as before, attributed to a ship which sailed from Freetown during an epidemic.

According to Malcolm, genuine yellow fever was present in 1818.

BONAVISTA (CAPE VERD ISLANDS).

This island is stated, on the authority of Pym, to have been infected by H.M.S. *Iedair*, which arrived from Freetown during the epidemic there of 1844–5.

On the other hand, it is stated that yellow fever made its appearance in these islands in the sixteenth century, and that they became an endemic centre from which the disease spread to the African Coast.

FERNANDO PO.

In 1829 yellow fever is said to have been introduced in its malignant form by H.M.S. *Eden*, but it has been also stated by medical chroniclers of the time that the disease might have been endemic (Pym). Outbreaks are also recorded in 1839 and 1862.

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(To be continued.)

THE twentieth congress of the German Surgical Society will be held this year in Berlin in April (19th to 22nd) under the presidency of Dr. L. Rehn of Frankfort. Among the subjects proposed for discussion are free transplantations; the disinfection of the hands and of the field of operation; Basedow's disease; floating caecum. The tenth congress of the German Orthopaedic Society will also be held in the Langenbeckhaus, Berlin, on April 18th.

HIGH TEMPERATURE AFTER LABOUR AND ITS TREATMENT WITH ASPIRIN.

BY

G. H. FINK, M.R.C.S.ENG., L.S.A.LOND.,
MAJOR, I.M.S.(RET.).

THE following case may be of interest to some owing to certain points which were noted in the treatment, and which might possibly have gone from bad to worse had not vaginal douching, aspirin, and attention to the *primae viae* been employed in the early stages after a severe rigor with high temperature, quick pulse, and rapid respiration. It was one of those cases in which the toxins of a particular micro-organism were beginning to be manifest in the blood, which could only be judged from the physical signs and symptoms by the bedside of the patient, and which, if not dealt with early, would eventuate in puerperal fever.

I was called in to attend the patient, a woman of about 28 to 30 years of age and a multipara, who had given birth to a healthy child in normal labour, on the fifth evening.

On arrival, there was the patient, a well nourished woman with a somewhat flushed and anxious countenance, and complaining of severe frontal headache. Her temperature was 104.4° F.; pulse 130 per minute, quick, and somewhat full and compressible; respirations 28 to 30 a minute. The tongue was covered with a white fur, bowels confined, skin dry, appetite fair, and she was able to sleep only in snatches. The abdominal bandage was loose, the uterus flaccid, and there were no pains present. On palpation over the hypogastrium there was tenderness on the left side, increased greatly on pressure. The urine came away freely, but scalded while flowing.

The lochia were red in colour, fair in amount, no clots or shreds on diaper. The breasts were full, and on pressure around areolae milk flowed freely. The baby emptied the mammary gland regularly on nursing.

No further pain or trouble of any kind was manifest elsewhere at the first visit; but on the following day there was pain under the right shoulder, with vomiting of bilious fluid.

Treatment.

1. Absolute rest in bed.

2. Regular ventilation of the room, as it was small and ill-ventilated.

3 There had been a daily warm douche of potassium permanganate lotion previous to my visit, which I now continued in the morning as hot as the patient could bear, and corrosive sublimate (1 in 5,000) in the evening, until it flowed quite clear. There are two points of interest in these respective douches, which I shall call (*a*) and (*b*). Before and after the douche the temperature was recorded, also in the intervals of the douche, in order to note the effect of douching as well as the antiseptic powers of each: (*a*) was not so useful as (*b*), and, while the reduction in (*a*) was one degree, that in (*b*) was two, and more prolonged in its action. Moreover, in (*b*) the shreds and some small clots came away in greater quantity, which I feel is due to the fact that corrosive sublimate lotion attacks the mucous membrane and brings away the areas which are affected by membranous attachments, and which are the foci of germ implantation.

4. Uterine contraction was necessary, hence the following mixture was prescribed with benefit:

℞ Tinct. ergotae am. ... ... ʒijss
Sp. ammoniae aromatic. ... ... ʒijss
Aquam, adde ... ... ʒviij
M. Sig. Two tablespoonfuls three times a day.

5. The bowels were acted upon when necessary with oleum ricini, and an occasional enema.

6. Sleep was procured with full doses of potassii bromidi at bedtime.

7. The temperature, though lowered to some degree by the above treatment, did not lower satisfactorily, nor as steadily from day to day until aspirin was given. The mode of administration was in the tabloid form—at first two tabloids of gr. v each t.d.s., then one tabloid, when the temperature lowered, and the skin became moist, while the patient slept; and last of all, only one tabloid at bedtime. With the lowering of the temperature sleep was more refreshing, hence the potassium bromide was discontinued, as aspirin seemed to act like a hypnotic. I think on the whole this drug is better borne than sodium salicylate in similar doses in a similar class of cases. The use of sodium salicylate has been advocated in a brief letter in the *Lancet* of August 18th, 1906, p. 463, by Dr. Chill, and I feel that it and other drugs of the same class are certainly most valuable in these particular cases. With the lowering of the temperature and the obtaining of sleep, the appetite began to improve daily, when the diet from beef tea, milk, milk and soda and barley water in regular quantities, was raised to a better standard from day to day until convalescence set in on the twelfth day after labour, when solids were allowed, and the diet the patient was accustomed to given. Half a glass of stout was allowed with her midday and evening meal, with much benefit to the mother and child.

I feel that in such a class of cases the surroundings of the patient, the bowels and liver, the uterus, and the circulatory apparatus have to be carefully watched and treated promptly.

The lowering of the temperature and pulse and the cleaning of the tongue cannot be attributed simply to regular douching alone, but to the regulating of the bowels, skin, and pulse.

The effect of the douching with (*a*) and (*b*) lotions undoubtedly attacked the foci of the affection in the uterus; but the unloading of the bowel and liver and the action of the aspirin through the blood upon the excretory apparatus had certainly a marked specific effect as well, and rendered the prompt action so necessary through the blood.

It has been suggested that in a certain number of puerperal cases alcohol is responsible for various manifestations, notably the rise in the temperature and delirium; but if one considers that in the pelvis of the woman after labour there are three important organs (the bladder, uterus and vagina, and the rectum) in close contact with each other, it is very necessary that the functions of each of these organs require strict attention before and after labour, for the simple reason that during labour there is very great pressure transmitted through the infant's head which is about to pass the pelvic cavity during birth upon those organs which are placed between two bony surfaces. There is every chance, therefore, of solution of continuity of mucous membranes and other tissues, and the action of pathogenic germs.

Whether the *Bacillus coli* is not also associated with such cases, as in puerperal fever, which is sometimes caused by it, seems interesting at any rate to note. In the case in point the patient's condition was certainly one for anxiety, and there were undoubtedly certain toxins of the organism named which were being poured out and creating symptoms which were on the road towards a puerperal attack from the symptoms manifest. A point of further interest was revealed later in this case and connected with former labours—namely, that the patient was never a satisfactory one, because there were signs of alcoholism. Now, in this particular class of cases it is very necessary to discriminate true alcoholism from the semblance of the effects of this article, for the toxins, in this particular stage of a case, might create a form of delirium or stupor, and alcohol, the usual cause assigned, is but an exciting or secondary cause. I am certain, however, from my careful observations of this case, alcohol was in no way responsible for the patient's peculiar manner, but that it was that class of case where certain toxins form and enter the circulation and affect the nervous system, and, unless treated promptly, may pass on to actual delirium and all the manifestations of the true puerperal condition.

It would be interesting to read the *Journal of the American Medical Association* of April 12th, 1902, p. 930, on the rôle of the *B. coli* in human affections, by Lartigan; and also the *Journal of Pathology and Bacteriology*, vi, 1900, No. 3, p. 195. These, together with what is quoted in the *Lancet* above mentioned, would be interesting reading in favour of my contention, which is amply supported by British authority as well.

The colon bacillus is associated in man with a number of important pathological processes, and is able to pass through the intestinal wall where there has been any slight damage and yet no perforation, setting up peritonitis, cystitis, and even puerperal fever.

In the early stages of this last-named disease the toxins are responsible for certain symptoms which the

system is endeavouring to throw off by the reaction, but which, if unsuccessful in accomplishing, the true puerperal state would rapidly follow.

Whether aspirin in such a state—because of its rapid action, together with the rest of the treatment through the bowels and douching with the corrosive sublimate lotion of course—is not the best treatment to adopt, is one for further opinion. At any rate, experience has shown that the salicine group of drugs is a very safe and sure remedy in the majority of such cases, and the earlier they are used in the treatment the better for the patient.

Memoranda:
MEDICAL, SURGICAL, OBSTETRICAL.

LIVING CHILD AND DEAD FETUS.

On December 20th, 1910, I was called by a midwife to a woman who had given birth to a living child and a dead fetus. The child seemed to be a full-term child. The fetus was partly macerated, the upper part of the head being a pulp, and some of the skin on the body had peeled off; it was probably a male child of five and a half to six months' development. There was one placenta, one half of which was decomposed and foul, the other half being apparently normal. There were two sacs of membranes. The next day the child smelt strongly of the same smell that came from the foul part of the placenta. Mother and child have both done well since and are doing well now.

Gosport. S. G. Harrison, M.R.C.S., L.R.C.P.

FRACTURE OF THE FEMUR AT BIRTH.

The case of fracture of the femur at birth described by Dr. Cecil Johnson in the Journal of December 17th, 1910, p. 1915, resembles closely one which fell to my lot eighteen months ago.

In my case the mother was a primipara, living some distance away, and when I arrived I found the breech presenting and tightly impacted, with the legs extended on the abdomen. Like Dr. Johnson, I was unable to bring down a leg or use finger or fillet as an aid to delivery, and so was compelled to have recourse to the blunt hook. Delivery was effected after vigorous traction for over an hour, while a colleague administered chloroform. At one moment during this proceeding the patient came round a little and twisted herself suddenly, with the result that the child's right femur was fractured at the junction of the upper and middle thirds. Although the end of the blunt hook was padded with rubber tubing, considerable bruising and subsequent sloughing took place in each groin. The child, a female, was a large one, and half an hour's artificial respiration was needed before she breathed satisfactorily.

The fracture was put up by means of a piece of stout millboard, with a broad end moulded to curve round the abdomen, where it was retained by a bandage. Thence it was carried to the knee and along the leg, where it was bandaged again, the thigh being left free and the leg being supported on a cushion, so that both thigh-joint and knee-joint were kept flexed. The child was then placed and kept in a padded box. By this means the fractured ends were brought into good apposition. The limb was released in about five weeks, and appeared soon to be as freely movable as the other, a few manipulations being used to overcome stiffness, etc.

Mr. McAdam Eccles kindly examined the child a year later, and could find no appreciable difference between the two legs.

Hampstead. J. S. Mackintosh.

The Convalescent Homes Association has issued a list of convalescent and other homes receiving London patients with particulars as to the conditions of admission. The list is classified into homes for men, women, and children only, for patients requiring surgical treatment, for mothers and infants, for gentlewomen, and homes and sanatoriums for patients suffering from pulmonary consumption. The list will, no doubt, be found useful by medical men in London; it can be obtained at the office of the Association, 32, Sackville Street, W., price 6d.

Reports
on
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

CHRISTCHURCH HOSPITAL, NEW ZEALAND.

DISLOCATION OF THE OS CALCIS WITH PARTIAL DISLOCATION OF THE ASTRAGALUS.

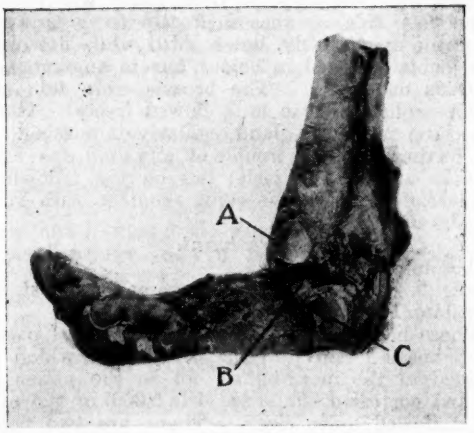
(Reported by P. Clennell Fenwick, M.B.Lond., M.D.N.Z., F.R.C.S.E., Honorary Surgeon to the Hospital.)

The patient in the following case, a lad aged 18 years, was admitted with a severely crushed foot. While fishing from Lyttelton Wharf the foot was caught and crushed between the wharf and a 3,000-ton steamer.

On admission the left foot was merely a tense bag of blood, almost black. No pulse could be felt. I made multiple incisions to relieve the swelling and took an *x*-ray photograph.

Apparent Condition.

Next day the swelling had diminished sufficiently to allow examination. The projection of the heel was absent, and below the external malleolus could be felt a smooth rounded projection, evidently an articular surface. I



A, Head of astragalus. B, Facets for astragalus on os calcis. C, Os calcis articulating surface for astragalus.

thought that this was the head of the astragalus and from the appearance of the skiagraph I diagnosed fracture of the os calcis with dislocation of the astragalus.

The foot showed symptoms of gangrene and I amputated 3 in. above the ankle.

Real Condition.

On dissecting the foot I found the following unusual condition. The astragalus was partially dislocated, the head was tilted upwards and rested on the dorsum of the foot, overlying the scaphoid. The os calcis was twisted completely on its side as if it had been driven right through the foot. The smooth projection beneath the external malleolus which I had mistaken for the head of the astragalus was seen to be formed by the articulating surface of the astragalus. The dislocation was so extreme that the two facets for articulating with the neck of the astragalus were lying sideways, having been wrenched round to present just in front of the external malleolus.

Remarks.

In these circumstances I was astonished not to find any fractures. The tendons on the outer side of the ankle were greatly stretched. The photograph of the dissected foot shows very clearly the curious nature of the dislocations. I believe that dislocation of the os calcis is almost unknown, and certainly my diagnosis was quite wrong in this case, although I had a good skiagraph to assist me.

Reports of Societies.

THE ROYAL SOCIETY.

Thursday, January 19th, 1911.

Sir ARCHIBALD GEIKIE, K.C.B., President, in the Chair.

Pharmacology of South African Boxwood.

DR. W. E. DIXON, in a paper on this subject, said that South African boxwood—*Gonioma kamassi*—has been employed occasionally in Lancashire as a substitute for common boxwood in the manufacture of shuttles; it is stated that symptoms of poisoning have occurred in a small proportion of the men engaged in sawing this wood or finishing the chiselled shuttles. From the wood an alkaloid can be obtained to about 0.07 per cent. This has a very characteristic physiological action which places it in the curare group of drugs. The members of this group may be regarded as possessing three actions in common: (1) Paralysis of certain nerve cells; (2) increase of spinal and medullary reflexes; (3) paralysis of motor nerve endings. Boxwood exerts all these effects. It paralyses the nerve cells in the brain and medulla as well as those on the course of the vagus and sympathetic nerves, and therefore after its exhibition to animals the stimulannt action of nicotine cannot be obtained. In small doses the reflexes are increased, and, if an injection be made into a vein going to the spinal cord of an animal, strychnine-like convulsions are produced. Boxwood caused death by paralysing the respiration; this is central in origin, but it occurs at a time when the phrenics and intercostals are depressed though not paralysed. Boxwood has no direct action on the heart or on other form of muscle. Reasons were given for believing that the recorded cases of poisoning were not due to the specific action of the drug after absorption, but to the effect of the drug in facilitating certain local reflexes principally of a respiratory nature in the predisposed.

Auto-agglutination of Red Blood Cells in Trypanosomiasis.

Dr. W. YORKE, after pointing out that auto-agglutinin existed in small quantity in the blood of many normal animals, stated that it was frequently present in much greater quantity in the blood of animals infected with trypanosomes. Reaction between auto-agglutinin and erythrocytes took place only at low temperatures. The strongest reactions were obtained when a suspension of washed erythrocytes in normal saline solution was treated at 0° C. with plasma, which had been prepared by defibrinating blood at 37° C. Auto-agglutinin could be removed from plasma by absorption with the erythrocytes of the same animal. The reaction between auto-agglutinin and red blood cells was reversible—the clumps disappeared on warming and reappeared on cooling. Iso-agglutinin and hetero-agglutinin were also often present in much greater amount in the blood of infected animals than in that of normal animals of the same species. From the red blood cells of an infected animal, which had been agglutinated in the cold by the plasma of the same animal, an active substance could be extracted with normal saline solution at 37° C. This substance agglutinated not only the red cells of the same animal and other members of the same species, but also those of many animals of different species. Observations of this kind indicated that auto-agglutinin, iso-agglutinin, and hetero-agglutinin were not different highly specific substances, but had closely related affinities; that a clumping together of the red blood cells was frequently observable in cover-slip preparations of the fresh blood of animals and man infected with trypanosomiasis was due to the existence of an excess of auto-agglutinin in the plasma, which reacted with the erythrocytes to a certain extent at the temperature (15° to 20° C.) at which the preparations were usually made. It was to be inferred from the information at present available that a marked degree of auto-agglutination of red blood cells was an extremely rare occurrence apart from an infection with trypanosomes. The phenomenon was therefore of some value as a diagnostic sign.

Transformation of Proteids in Ripening Cheese.

Mr. M. NIERENSTEIN stated that he had found, contrary to the accepted view, that the so-called ripening of cheese was not accompanied by a transformation of proteids into fats, the increase of weight of the latter as observed by other workers being due to the presence of free cholesterol, aminovaleric acid, putrescine and cadaverine in the ethereal extract. This investigation disproved one of the frequently quoted evidences in favour of the theory that proteids served as a source for the fat formation in the animal body.

Action of X Rays on the Developing Chick.

Mr. J. F. GASKELL, M.A., M.B., had observed no difference in the action of x rays upon any one tissue rather than another. The action was confined to the lowering of the mitotic activity of the growing tissues. If this diminution was not too great, complete recovery occurred, and the chicks hatched out at the usual time. If the diminution was above a certain degree, recovery did not take place, and further development was arrested forthwith. The critical dose, which just prevented recovery, varied with the stage of development of the embryo, decreasing as the mitotic index decreased. The "mitotic index" as defined by Minot represented the number of mitoses per 1,000 cells in the various tissues of embryos of various ages and he had shown that throughout embryonic life a rapid diminution of mitotic activity was going on. He called the figures obtained the mitotic index for that particula tissue.

Antelope a Possible Reservoir for Trypanosoma Gambiense.

Colonel Sir DAVID BRUCE, C.B., F.R.S., A.M.S., and Captains A. E. HAMERTON, D.S O., and H. R. BATEMAN, R A.M.C. (Sleeping Sickness Commission of the Royal Society, Uganda, 1908–10), reported experiments to ascertain if antelope may act as a reservoir of the virus of sleeping sickness (*Trypanosoma gambiense*). It was known that the tsetse flies (*Glossina palpalis*) around the northern shores of the Victoria Nyanza still retained their infectivity for sleeping sickness, in spite of the fact that the native population was removed from the lake-shore some three years ago. A series of experiments was therefore carried out to ascertain if the antelope, which were fairly common along the uninhabited shores of the lake, were capable of acting as hosts of the parasite of sleeping sickness. Eleven antelope of the waterbuck, bush-buck, and reedbuck species were already obtained from a district where tsetse flies and sleeping sickness did not exist. Blood from these animals was first inoculated into monkeys to ascertain if they were already naturally infected with trypanosome disease. They proved to be healthy in this respect. Tsetse flies (*Glossina palpalis*) that were known to be infected with the virus of sleeping sickness were then fed upon each of the eleven antelope. After about eight days the blood of these animals was again inoculated into susceptible animals, with the result that the latter became infected with the *Trypanosoma gambiense* in every case. In eight out of the eleven buck under experiment *Trypanosoma gambiense* appeared in their blood for a few days only (some seven to twelve days) after they had been bitten by infected flies. Flies that were hatched out in the laboratory, and had never fed before, were now fed upon the infected antelope, and subsequently upon monkeys. After an interval of about thirty days, required for the development of trypanosomes within the fly, monkeys were infected with sleeping sickness from the antelope by the agency of *Glossina palpalis* in sixteen out of twenty-four experiments. On dissecting the flies which had been fed upon the infected antelope it was found that 10.8 per cent. of them were infected with *Trypanosoma gambiense*. The highest percentage of infected flies in any one of the positive experiments was 21 per cent.; the lowest was 1.3 per cent. Nine of these antelope infected with *Trypanosoma gambiense* were under daily observation for over four months. They remained in perfect health. Two of them (a waterbuck and a bushbuck) never showed trypanosomes in their blood although examinede very day. Both these antelope-infected flies fed upon them, one of them as long as fifty-five days after its infection. No wild antelope

inhabiting the lake shore had yet been found to be naturally infected with *Trypanosoma gambiense*.

The Domestic Fowl not a Reservoir for Trypanosoma Gambiense.

The same members of the Sleeping Sickness Commission also reported experiments to ascertain if the domestic fowl of Uganda may act as a reservoir of the virus of sleeping sickness (*Trypanosoma gambiense*). There was evidence that tsetse flies (*Glossina palpalis*) feed on the blood of birds as well as that of mammals inhabiting the shores of Victoria Nyanza. Domestic fowls, as representing birds, were experimented with in the search for possible hosts or reservoirs of the virus of sleeping sickness. A series of twenty-one experiments were carried out to ascertain: (1) If these birds could, like antelope, be infected with *Trypanosoma gambiense* by the bites of known infected flies; (2) if birds so infected could transmit the parasite to newly-hatched *Glossina palpalis* which had not fed before they were allowed to bite the fowls; (3) if these flies could convey sleeping sickness to normal monkeys. About 2,000 flies, many of which had been proved to be infected with virulent *Trypanosoma gambiense*, were fed upon twenty-one domestic fowls. The results were negative in every case, as ascertained by frequent microscopical examinations of peripheral and centrifuged heart's blood, and inoculations of the fowls' blood into susceptible animals. Four hundred newly-hatched flies were fed upon three of the fowls which had been bitten by infected flies. The former were subsequently fed upon monkeys, with the result that they failed to convey sleeping sickness from fowls to monkeys. Two hundred and eighty-three of these flies were dissected, and no flagellates could be found in them. The conclusion was that the Uganda fowl could not act as a reservoir of the virus of sleeping sickness.

EDINBURGH OBSTETRICAL SOCIETY.

Wednesday, January 11th, 1911.

Dr. F. W. N. HAULTAIN, President, in the Chair.

Landry's Paralysis in Pregnancy.

DR. SAMUEL DAVIDSON'S communication on a case of Landry's paralysis occurring during pregnancy and the puerperium was read by the SECRETARY. The woman had had six normal pregnancies, while the seventh was complicated by pains in the legs and vomiting. In January, 1906, she was delivered of a dead child, and three days later signs of paralysis ensued and progressed till all four limbs were powerless. For four months retention of urine was present. Fifteen months after the onset the arms began to improve, but the fine movements of the fingers were later in reappearing. She again became pregnant, and in June, 1908, was delivered of a healthy living child. The pregnancy did not make the paralysis worse. The gradual improvement was maintained till, in June, 1910, the extensor proprius hallucis was alone paralysed, and, except occasional cramps, all the other symptoms had disappeared. The treatment consisted in the administration of arsenic and strychnine. DR. BALLANTYNE said he had found only one similar case reported in the literature.

The Nature of Achondroplasia.

Dr. BERRY HART read a paper on the nature of achondroplasia, craniocleidodysostosis, and brachydactyly. Three points were to be cleared up: the loss producing the variation, the reason for its ratio transmission, and the locus of the production of the variation. In achondroplasia, the arms, legs, and ribs were short, and the basi-occiput was imperfectly ossified. These bones arose in early endochondral ossification. In craniocleidodysostosis there was a deficiency of early ossification in the bones developed in membrane. In brachydactyly the middle phalanx was represented by a small, cartilaginous nodule ankylosed to the first phalanx. According to Dr. Hart, in all three there was a deficiency of an exact group of characteristics or units. The individual who started the abnormality did so suddenly; he was a "sport," or, better, a mutation, and the variation was handed down to his descendants in a definite ratio. The best explanation of this was given by the Mendelian theory. Mendel showed that plants were made up of different unit characters—the unit of length, the unit of colour, and so on. If tall peas and dwarf peas were artificially crossed, the first generation were all tall. If now, these were allowed to self-fertilize, the second generation consisted of peas that bred in the ratio of three tall to one dwarf. Mendel failed to explain why the first generation were all tall, thus apparently failing to follow the law of probability. According to Dr. Hart, the Mendelian theory erred in referring the variations to the combinations of egg cells and pollen grains, and he was led to modify the theory. He postulated that each zygote or oöspore had two parts—a propagative part and a somatic part. When tall and dwarf peas were artificially crossed, all the first generation were tall in the somatic part, but in the propagative part the Mendelian ratio came out 1:2:1. Hence, even in the first generation the law of probability held in the propagative part, but not until the second generation in the somatic part. Dr. Hart then gave his views regarding the origin of the primitive germ cells. He held with Dr. Beard that they were not derived from the germ epithelium and the sperm epithelium covering the ovary and the testicle respectively, but arose from the early divisions of the zygote. The zygote was formed by the union of the matured ovum and the spermatozoon. What was the true significance of the maturation of the ovum? The primitive germ cell was possessed of a definite number of chromosomes, which varied in different species. In the round worm of the horse it was four, and in the human female it was said to be thirty-two. During the transit of the primitive germ cells along the developing embryo no mitoses took place. But after they had reached the genital ridge (a phenomenon observed by Ingals in a human embryo of 4.7 millimetres) and had settled there, the primitive ova or oöcytes began to show karyokinetic changes. These consisted of gross divisions of the chromosomes into fragments, and led to a circulation of the determinants of unit characters, which were contained in the chromosomes, in the definite probability ratio. In the maturation of the ovum, some of the chromosomes were thrown off in the polar bodies—a gross loss, or, as it was called, a mutation—and by this means was furnished another method of varying determinants. This gross loss explained the occurrence of achondroplasia and the other two variations. Definite units were lost—in achondroplasia the unit of length for the long bones of the limbs and for the ribs, and the unit for the ossification of the basi-occiput. As the zygote was deficient in these units, the primitive germ cells were also deficient in the same group, and so the variation became transmitted to the offspring. The instance of the free-martin, which was an identical twin with a potent bull and non-potent bull from the same zygote, proved that unit characters must be segregated in the zygote, and was not due to gametic segregation. Dr. Hart looked forward to the day when the human body could be regarded as made up of unit characters. For example, the skeleton contained three fundamental groups of characters: early endochondral ossification (long bones), development in membrane (cranial vault, half of clavicle), late endochondral ossification (spine, carpus, tarsus). Variations in their origin and transmission were automatic, and governed by the law of probability. Even when the power of transmission was absent—for example, in anencephaly—the variation still turned up automatically. In summing up, Dr. Hart said that gametic segregation, as assumed by Mendel, was wrong, and must be replaced by zygotic segregation of unit characters; the primitive germ cells were derived from a part of the zygote which was early set aside, and not from the germ epithelium; the mitoses of the nuclear chromatin brought about a circulation of the determinants of unit characters, and rendered possible variations in these unit characters which arose according to the law of probability; the gross loss of material in the maturation of the ovum rendered possible the sudden occurrence of such variations as achondroplasia and brachydactyly. DR. BALLANTYNE said that he had tried to show in 1891 that anencephaly was due to a loss of the bones developed in membrane. He found many facts difficult to explain by the Mendelian theory—the birth of seven anencephalic children to one woman; the bearing of abnormal children to a first husband and of normal children to a second. The theory did not explain

variations of excess, such as an extra digit, or a third phalanx in the thumb. Drs. BARBOUR, RITCHIE, FORDYCE, and COWAN GUTHRIE also spoke, and Dr. HART replied.

Specimens.

A twin fetus anencephalus was shown by Dr. BALLANTYNE; and a uterus with submucous fibroids, removed from a girl aged 19, by Dr. HAIG FERGUSON.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

Friday, January 6th, 1911.

Dr. H. JELLETT, President, in the Chair.

Pubiotomy.

Dr. E. HASTINGS TWEEDY exhibited six of nine patients on whom he had performed pubiotomy. The PRESIDENT exhibited one. The three patients not shown lived in the country and could not be brought up to the meeting. They in no way differed from those shown. The most recent operation had been performed eight weeks previously, and four years had elapsed since the first was performed. All the patients walked without discomfort or limping, and had made uneventful recoveries. The PRESIDENT said that the case of pubiotomy which he showed was done shortly after his election to the Rotunda. He had not performed the operation before or seen it performed, and therefore, as he found it easy and the result appeared to be excellent, he considered that other people ought not to find any difficulty. Dr. Hayes's skiagram showed the condition of the bones very clearly. Dr. HAYES said he thought there was a great deal in favour of showing the negative instead of the reproduction of it, as in the latter a lot of the detail was lost. The first patient was Mrs. C The line of incision through the body of the left pubic bone could be traced in the skiagram. There was bony union. The next negative was of a patient named Mrs. K, who was a patient of Dr. Jellett. The line of incision in this case was very well marked. It ran obliquely downwards and inwards towards the symphysis. There was no union in this case so far, but she was able to walk about already. The next case was Mrs. N. In this the negative showed a separation of the fragments by about ¾ in. in the left pubic bone, through which the incision was made. This patient had, of course, fibrous union. It was a question whether there was any absorption of the separated fragments, but certainly there was a great deal of separation between them. The next case, Mrs. G., had a symphysiotomy. The pubic articulation was indistinct, apparent from callus formation. The separation between the adjacent portions of the pubis was more marked below than at the upper margin. The next case, Mrs. D., had a pubiotomy and symphysiotomy. The pubic articulation was indistinct, apparently from callus formation. The incision through the left pubic bone could be seen to run vertically downwards. It could also be seen that the separated portion was in three fragments. Whether this was a fracture it was impossible to say, but it did seem something like a comminuted fracture. The articulation at the symphysis was indistinct in this case also. The next case was Mrs. O'T. The line of incision ran downwards and inwards. The upper and inner fragment of the left pubis had been cut off, resulting in fibrous union. This case was almost a symphysiotomy. The next case was Mrs. L. The line of incision could not be traced in this negative. There was no doubt of bony union there. The next case was Mrs. S. In this the incision went through the inferior ramus of the left pubic bone, and there was also bony union. Professor ALFRED SMITH said that from what he had seen demonstrated by Dr. Tweedy and also by the skiagrams of Dr. Hayes, a strong case had been made out, and it would require greater arguments to do away with the result. In reference to the skiagrams shown, in one of these there was a case of bony union which had a subsequent normal delivery. This was very interesting, as it showed what did really occur. In this case there was no evidence that there was any increase in the size of the pelvis. Sir WILLIAM SMYLY said the operation recommended itself to him very strongly. He certainly thought it a superior operation to symphysiotomy. It was both instructive and interesting to see those women there that night and how well they walked about. Dr. GIBBON FITZGIBBON said that in regard to one of the cases shown in Dr. Tweedy's series, in which he did a symphysiotomy, he remembered the case being done when he was Assistant Master in the Rotunda. That woman had had three children since, the second and third being born by the natural efforts, and one of these weighed 9 lb.; but in the fourth pregnancy an extraperitoneal Caesarean section had to be done. He asked was there any condition of the pelvis shown in the skiagram to account for this? The interval between the symphysiotomy and the section was four or five years, and he would like to know whether there was callus formation or other change in the pelvis which prevented the natural delivery of the fourth child. Dr. HOLMES said that with regard to union there was considerable doubt as to whether bony union was better than fibrous with regard to future delivery. Dr. NEILL said he knew a case of pubiotomy, and he had delivered the same patient on two previous occasions of healthy living children by induction of premature labour. Dr. TWEEDY and the PRESIDENT both replied.

ROYAL SOCIETY OF MEDICINE.

MEDICAL SECTION.

Tuesday, January 24th, 1911.

J. MITCHELL BRUCE, M.D., F.R.C.P., President, in the Chair.

The Auscultation of Joints.

Dr. A. E. GARROD, in a paper on auscultation of joints, said the loudest noises produced in joints were generally in those least seriously affected. The knee-joints were especially adapted for this method of examination, but even the smallest joints were thus accessible. In cases of incipient osteo-arthritis sounds might precede all subjective signs. On the other hand, noiseless joints were by no means always healthy, as in the case of joints containing fluid. Tuberculous joints also were frequently silent, as also were those in the acute stages of osteo-arthritis, though many of the latter showed a "synovial crackle," indicating that the morbid process was periarticular. An osteo-arthritic "scrunch" he considered characteristic of fibrillation of cartilage and formation of osteophytes. A friction sound might be heard with eburnation of bone and in inflammation of tendon sheaths. The PRESIDENT and Sir JOHN BROADBENT asked as to any sound produced in gouty joints, and Dr. A. E. VOELCKER as to the risk of confusing sounds produced outside joints. Dr. GARROD, in reply, said that difficulties as to extraneous sound disappeared with practice. He had nothing to offer towards the discrimination of gouty joints by this method.

Abdominal Movements in Pericarditis.

Dr. W. ESSEX WYNTER said that the loss of abdominal respiratory movement in pericarditis depended, he considered, directly on an involuntary inhibition of the action of the diaphragm. An examination with the radiographic screen showed fixity of the diaphragm in the position of expiration. Several cases of clear pericarditis were described in which this phenomenon was apparent. In one alone of his series of cases of pericarditis abdominal movement was recorded as well marked. This diaphragm phenomenon might precede and outlast other signs of pericarditis. Limitation of abdominal movement was more marked in the fibrinous variety of pericarditis. It was less obvious in cases with effusion and absent in those with adhesion. Dr. PERCY KIDD said he had occasionally noticed loss of abdominal movement in pericarditis, and suggested that it might be more prominent in cases where the diaphragmatic surface of the pericardium was involved. Dr. ROBERT HUTCHISON said that rigidity of the abdomen did not occur in all cases of pericarditis, and also thought the explanation might be the involvement of the diaphragmatic surface comparable with the limitation of movements in diaphragmatic pleurisy. Dr. VOELCKER likewise alluded to the absence of this sign in some cases of pericarditis, and particularly to one case in which the only place at which friction sound could be heard was in the subcostal angle, suggesting a diaphragmatic position of the pericarditis, and yet abdominal move-

ment was perfect. The paper was also discussed by the PRESIDENT, Mr. M. A. CASSIDY, Dr. NATHAN RAW, Dr. JOHN FAWCETT, and Sir JOHN BROADBENT.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, January 27th, 1911.

Dr. E. CAUTLEY, President, in the Chair.

Cases and Specimen.

THE following cases and specimen were shown: Dr. ERIC PRITCHARD: (1) *Intermittent word-blindness (congenital)* in a boy, aged 8½ years, who was both intelligent and dextrous. His vision was normal and his hearing good. He was slow at learning to read, but quick at mental arithmetic, and had no difficulty in reading Arabic numerals. He could recognize simple words when spelt aloud, but as a rule was quite unable to recognize the same words when written. On occasions, however, he could read simple sentences. He could write from dictation and copy written words, but did not understand their meaning unless he repeated the letters slowly or slowly performed the movements for writing them. Thus, though his visual memories for words and letters were defective, his auditory and kinaesthetic memories were good. The intermittent character of the word-blindness was suggestive that the condition was a psychosis rather than due to a defect in the visual word centre. (2) *Idioglossia* in a girl aged 9½ years. The child was prematurely born, and her mother's half-brother was a deaf-mute. She was 2 years old before her speech was intelligible. She was a bright child, who wrote and composed well. Her mental condition was normal, but her hearing was slightly defective. The vowel sounds were more or less correctly pronounced, but consonants presented a difficulty, C D T G being all pronounced Nee, H as Hay, J as Nai, S and X as Ai, V as Mew, Z as Ney, etc. Mr. H. S. CLOGG: Specimen from the case of *Necrosis of the lower jaw* shown at the last meeting. The child subsequently had abscesses on either side of the jaw, which were incised, and it was determined to remove the necrosed portion of the bone. The specimen consisted of the whole of the lower jaw except the inner shell of the ascending ramus and the condyloid process on the left side. In the place of the jaw the child now had a firm solid arch, but whether this was bone or not it was impossible to say. Dr. T. R. WHIPHAM: A case of *Enlargement of the liver* in a healthy-looking boy, aged 9 years, with no symptoms except slight jaundice. The liver was enormous, reaching down to the anterior superior spine of the ilium and to the umbilicus in the middle line, and extending below the left costal margin. In the epigastric angle was a large rounded swelling, which appeared to rise from the surface of the liver and was more elastic than the rest of the organ. The spleen at one time had been just palpable below the ribs. There was no ascites, and the chest was normal. There was no enlargement of glands anywhere. The blood showed an eosinophilia of 7.8 per cent., but no other marked changes. The boy presented no external signs of congenital syphilis, but there was a history of the mother having had three miscarriages. During the previous five weeks no change had occurred in the patient's condition, and his temperature had been normal. The general opinion was that the case was one of hydatid cyst, but diagnoses of gumma and hypernephroma were also suggested. Mr. S. STEPHENSON: *Embolism of the central artery of the retina* in a girl aged 11¾ years, with no signs of inherited syphilis. The patient had mitral regurgitation, but presented no evidence of mitral stenosis. On December 8th she had slight pain over the left eye, and the next morning found that the sight had gone. On examination there was no perception of light in the eye. The retinal arteries were filiform, and the yellow spot region was oedematous, with a red spot at the fovea. The disc was blurred by the surrounding oedema. The disc had gradually become atrophic, and the oedema had practically disappeared, so that the contrast between the fovea and the surrounding fundus was not pronounced. The arteries were still smaller than normal. When shown the eye had sufficient sight to distinguish between light and dark. Dr. K. KELLIE: (1) Two cases of *Infantilism*—(*a*) A girl, aged 4 years; weight 17 lb. 2 oz., height 29½ in. The abdomen was large, and suggested at first tuberculous peritonitis, but injection of tuberculin and von Pirquet's test were negative. The stools were large and greasy, showing that probably the pancreas was at fault. (*b*) A twin boy, aged 3¼ years; weight 16 lb., height 28 in. The patient could not walk, and could only speak a few words. The stools were frequent, foul and slimy. (2) *Persistent jaundice* in a male infant, aged 5 months. Jaundice had been noticed since the fourth day and had varied slightly in intensity. The motions were colourless. The liver was enlarged to three fingerbreadths below the costal margin. There was no history of syphilis. The diagnosis lay between congenital syphilis and congenital obliteration of the bile ducts.

Splenomegaly.

Dr. PARKES WEBER read a paper on splenomegaly with recurrent jaundice ending in hepatic cirrhosis and ascites, with remarks on the splenomegaly of inherited syphilis in children. Various cases were described or referred to. From a study of his own and other cases, and from the literature of the subject, he came to the following conclusions: (1) Moderate splenomegaly in children, about the ages of 5 to 16 years, may be almost the only evidence of an inherited syphilitic taint, and is often accompanied by occasional (usually only slight) attacks of obstructive jaundice. (2) Hepatic cirrhosis, with or without ascites, may be associated with splenomegaly, and at the time of death is probably usually of the ordinary "hobnail" type. (3) Though it seems doubtful that the cirrhosis of the liver in these cases is of specific syphilitic origin, it is quite possible that the presence of an inherited syphilitic taint may diminish the resistance of the liver towards the action of toxins (including alcohol) and render it specially liable to cirrhosis. (4) The inherited syphilis in such cases need not necessarily be associated with retardation in general physical development. (5) Great caution must be employed with regard to antisyphilitic, especially mercurial, treatment, probably on account of the general delicacy of the patients and their liability to renal and catarrhal complications. (6) There may be very little real anaemia, or none at all. There may even be more or less polycythaemia, probably of "reactive" nature. (7) Abdominal crises (pain, etc.) may occasionally occur. (8) Some cases of familial splenomegaly in two or more brothers and sisters may perhaps be dependent on inherited syphilis. (9) Splenomegaly in children may be the most important sign of the presence of hepatic cirrhosis. (10) Some cases of splenomegaly in children with inherited syphilis probably ultimately present the characteristic clinical features of splenic anaemia, or Banti's disease.

Ulcerative Stomatitis in Children.

Mr. S. F. ROSE read a paper on ulcerative stomatitis in children, laying stress on the typical distribution of the lesion on one side of the mouth and the efficacy of potassium chlorate as a means of treatment. The disease occurred for the most part in ill-nourished and neglected children, and is frequently started by one or more loose or septic teeth.

The cases and papers were discussed by the PRESIDENT, Dr. G. DE B. TURTLE, Mr. MILNER BURGESS, Dr. PORTER PARKINSON, Dr. W. CARR, Dr. G. A. SUTHERLAND, Dr. E. PRITCHARD, Dr. J. D. ROLLESTON, Dr. F. LANGMEAD, Mr. S. STEPHENSON, and Dr. PARKES WEBER.

SECTION OF OTOLOGY.

Friday, January 20th, 1911.

Mr. ARTHUR CHEATLE, President, in the Chair.

MR. C. E. WEST, in a paper entitled, *The bacteriology of chronic post-nasal catarrh* (a preliminary study from 50 cases), said the material for examination was obtained by means of a specially devised post nasal cannula shielding a sterile swab, which could be made to protrude when the cannula was in the naso-pharynx, and could be withdrawn into its sheath before the instrument was removed from the mouth. Pneumococci were found in nearly 70 per cent., and were predominant in 36 per cent. Streptococci (undifferentiated, were isolated in 24 per cent. *Staphylococcus aureus* occurred generally with pneumo-

cocci and streptococci in 26 per cent. Friedlander's bacillus was found in 12 per cent., being predominant in 6 per cent. *Micrococcus catarrhalis* appeared in 10 per cent. After contrasting these with control cases, the author concluded that the flora did not appear to differ materially in kind from that met with in the average naso-pharynx. He hoped by further researches to furnish data on which broader deductions could be based. Dr. MILLIGAN (Manchester) described two cases of *Otitic cerebellar abscess* which recovered after operation, and two cases illustrating the surgery of labyrinthine infections. Mr. CHEATLE showed a patient with an exostosis in the tympanic cavity, and, in conjunction with Mr. G. J. JENKINS, described a case in which disease in a large sinus tympani caused persistence of discharge after the radical operation, and in which caloric tests were applied by a copper conductor, and ethyl chloride sprayed to the exposed inferior crus of the posterior semicircular canal. Mr. CHICHELE NOURSE showed a boy who had recovered from a localized infection of the lateral sinus without ligature of the jugular vein. Dr. CATHCART described the application of Bier's treatment in a case of acute suppurative otitis media with signs of mastoiditis. Dr. MACKENZIE demonstrated Bárány's *Lärm apparat* upon a man with apparently absolute unilateral deafness due to an unknown cause.

SECTION OF THERAPEUTICS AND PHARMACOLOGY.

Tuesday, January 17th, 1911.

Dr. W. E. DIXON in the Chair.

Autoinoculation in Medicine.

DR. CLIVE RIVIERE read a paper entitled "The Rôle of Autoinoculation in Medicine: a Plea for its Rational Extension." He held that, apart from the local application of heat by poultices and fomentations, which were acknowledged examples of "empirical vaccine-therapy," the physician had in many directions been unconsciously using the weapons of the vaccine-therapist. The two processes necessary for the resistance of bacterial invasion were irrigation of the infected part with plasma, and the development of specific antibodies by autoinoculation, and it was suggested that the real action of many drugs depended on an encouragement of these processes. The contention was illustrated by reference to the action of expectorants in the treatment of bronchitis, of ipecacuanha in dysentery, and in some catarrhal conditions of the intestinal tract, and of terebinthinates, copaiba and cubebs in infections of the urinary tract. The relative advantages of "autoinoculation" and "direct" injection of vaccines were discussed, and the suggestion made that the administration of emetics and purgatives in gastro-enteritis, and the application of massage to the abdomen in tuberculous peritonitis or increased negative pressure during inspiration in bronchitis, were essentially methods of "irrigation" and resulting "autoinoculation." The paper was discussed by Dr. SPRIGGS, Dr. BAINBRIDGE, and the CHAIRMAN.

MANCHESTER PATHOLOGICAL SOCIETY.

Wednesday, January 18th, 1911.

Mr. J. W. SMITH, Vice-President, in the Chair.

Skin Pigmentation.

DR. W. DYSON gave an account of some researches on skin pigmentation, and showed by means of the bichromate-haematoxylin method of Lorrain Smith and Mair that pigment was always formed as part of a complex granule which contains a lipoid substance. These granules were present constantly in the basal epithelial cells, being formed there under the influence of the nucleus as a part of the normal metabolism of the cell. The pigment was in origin a lipochrome, the melanin being the chromatic proteid portion after separation from the complex lipoid granule. He found no evidence of pigment formation in the cutis, but showed sections which illustrated the passage of lipoid substances from the epidermis into the cutis along lymphatic channels. An increase of pigment, he said, could take place in two ways: (1) By the stimulation to increased activity of the epidermal cells by various agents (light, heat, toxaemic conditions, etc.). This pigmentation was transitory in character, and if the stimulus ceased the pigment gradually disappeared. (2) By deficient drainage, due to obstruction of the lymphatics of the cutis. The normal amount of pigment being formed, it was unable to escape as quickly as it was elaborated, and therefore accumulated. This form of pigmentation was permanent, and had a tendency to become progressively worse.

NORTH OF ENGLAND OBSTETRICAL AND GYNAECOLOGICAL SOCIETY.

Friday, January 20th, 1911.

Dr. W. K. WALLS, President, in the Chair.

THE following were among the exhibits: Dr. DONALD (Manchester): *Tuberculous ovaries, tubes, and uterus* removed from an unmarried girl, aged 18. The symptoms were mainly continuous uterine haemorrhage for three months, with pelvic discomfort. There was some loss of flesh, but not very marked. Examination revealed a tense swelling in the pouch of Douglas continuous with a tender mass in the right iliac region. On opening the abdomen (July 27th, 1910) two ovarian abscesses were found firmly united to one another, to the uterus, and surrounding structures. Six months had passed since the removal of the parts shown, and the patient was in good health. Dr. HELLIER (Leeds): *Dermoid cyst of right ovary*, with a simple cyst of left broad ligament and bilateral papillomatous ovarian disease, all removed from a single woman, aged 46, with a history of abdominal tumour, pain, and some loss of flesh for some months past (operation, January 11th, 1911). Dr. W. K. WALLS reported a case of *Caesarean section under spinal (stovaine) anaesthesia* undertaken on account of mitral stenosis and kidney disease, which rendered the patient a bad subject for general anaesthesia. The operation was performed when the patient was about eight months pregnant, as there was great dyspnoea, accompanied by marked waterlogging of the lungs, general oedema, and a large amount of albumen in the urine. The patient made a good recovery, and her general condition was greatly relieved. The baby died in a convulsion when three days old. Dr. WILLIAM FLETCHER SHAW (Manchester): A case of apparently double ovarian abscess which occurred in a patient without any rise of temperature or pulse, or general malaise. The walls of the abscess cavity were hyperaemic, but showed no granulation tissue. The contents were chiefly colloid material, with a good number of leucocytes; no micro-organisms were found. He raised the question whether these apparent abscesses occurring without general symptoms were really due to micro-organismal infection, or whether they were simple cysts which had rapidly enlarged and their contents merely assumed the appearance of pus. Dr. A J. WALLACE (Liverpool) related two cases in which manipulations carried out to effect delivery had produced serious lacerations of the parturient uterus:

A primipara, aged 31, was sent into the Maternity Hospital with the history that labour had begun forty-eight hours previously; the midwife summoned medical assistance, and then attempts were made to deliver first with forceps, then by version. It was thought that a tough fibrous band divided the uterus into two halves, and this prevented delivery. The patient was suffering from profound shock, pulse 140, and there was some vaginal bleeding. A deep tear was found in the posterior vaginal wall, the cervix was badly lacerated, and the anterior aspect of the retraction zone was torn away from its attachments, the retraction ring forming the band described. A leg was brought down and delivery effected, but the patient's condition did not warrant further interference, apart from her being "suspect" as regards infection. Death occurred three days later from sepsis.

The second case was that of a woman, aged 40, who had had five children. At the onset of labour a breech presentation was converted into a vertex by external version. Inertia uteri was present throughout, necessitating manual dilatation of the cervix and forceps.

On recovering from the anaesthetic the patient complained of agonizing abdominal pain, tympanites developed and increased, neither faeces nor flatus being passed, whilst the pulse-rate remained at 120. Dr. Wallace saw her forty-eight hours later; the vaginal portion of the cervix was intact, but a tear through the lower uterine segment opened into the left broad ligament, the lamellae of which were widely separated by blood and clot. Through the posterior lamella there was a rent leading into the peritoneal cavity. When the abdomen was opened much blood and clot escaped. Abdominal hysterectomy was performed, and the patient recovered after a stormy convalescence.

Reviews.

THE CLINICAL STUDY OF TUBERCULOSIS.

The stimulus given to the study of tuberculosis in all schools of medicine by the international endeavour to stamp out the disease has resulted in an enormous accumulation of literature. Indices and *Centralblaetter* have hardly been able to keep pace with the scattered output in many different tongues, and the concentration of all that part of our knowledge upon which there is a general agreement is greatly to be desired. In a large work which they describe as a handbook of general tuberculosis for practitioners and students,[1] Drs. Bandelier and Roepke have brought together a great deal of information on the diagnosis and treatment of the disease as it affects individual organs or groups of organs. Written for practical use, it is essentially clinical in tone, and should be found useful as a book of reference, when aid is required in doubtful cases. The authors have had much practical experience as directors of sanatoriums, and have already collaborated in the production of a large work on the specific diagnosis and treatment of tuberculosis, a notice of which appears on page 265, and has achieved the distinction of five editions in three years. In the present book, dealing systematically with the disease as affecting groups of organs, there must needs be a good deal of repetition, and, indeed, on the subject generally it is difficult to find anything new to say. But in the instillation of medical facts, as also in political fictions, repetition is a necessary element. The solid facts of tuberculosis are gradually becoming absorbed by the public mind, but many years of patient reiteration on the part of medical instructors will be needed before effective precautions become universal. The authorities have fortified their own knowledge by reference to bibliography containing 182 names, but among them it is difficult to find any but German authorities, and one looks in vain for any representative of our own schools. The value of Wright's work, although incidentally referred to, is obviously depreciated from the clinical point of view, and the same may be said of the views of Wassermann and Bruck, which are classed as untrustworthy.

Treatment, rather than scientific study, of the disease in all its manifestations is the avowed object of the book. The authors have often expressed themselves as staunch upholders of tuberculin treatment in association with hygienic measures, and it is satisfactory to note that their enthusiasm for it does not blind them to its disadvantages in certain cases. On this point alone the indications given should make the whole work valuable for reference in practice, but it abounds in useful hints and warnings which stamp it as the outcome of a knowledge of men and things, and not merely a compilation of bookwork. It is satisfactory to note that the ideas of a few years ago as to the value of forced feeding have given place to rational and scientific study of the needs of each particular organism. The practical value of psychical treatment is fully recognized, although the authors' advice to let the patient know the full extent of his trouble, as a means of securing his willing co-operation with the doctor, is not always consistent with the desire to maintain his cheerfulness and optimism.

The relative degree of susceptibility present in any patient must of necessity influence treatment, and hence no common rules can be laid down for all, and this is particularly important to bear in mind where injections of tuberculin are to be used for treatment. Caution should be the watchword not only in the selection of cases for injection, but in the earlier dosage and in the source of the tuberculin to be used. Emulsions of uncertain origin should be rigidly excluded.

The authors appear to hold that sanatorium treatment, combined with the persistent use of tuberculin, forms the most successful means of combating all forms of tuberculosis at the present day. A useful list of all the public and private sanatoriums now recognized in Germany is appended, and the approximate cost of living in each is noted. In many of them the charges will be found to be considerably below those usually made in this country.

In the latter part of the book the disease as affecting individual parts and organs is described seriatim. Tuberculous disease of the upper air passages is discussed, but mainly by quotation from a very trustworthy source, the late Dr. Moritz Schmidt. The diagnosis and treatment of abdominal tubercle is always difficult and is open to many errors; the use of diagnostic injections of tuberculin may serve to distinguish between tubercle and cancer, but the reaction following on injection is apt to be severe even with minute doses. A certain number of observations have been made in a few cases of mixed tuberculous and syphilitic infection as to the value of "No. 606"; they appear to have given favourable results and, doubtless, further trials will be recorded.

Chapters on scrofulosis and on tuberculosis in children conclude the work, which will not only be found useful as a book of reference in daily practice, but interesting also as an epitome of modern knowledge on the subjects as it presents itself to the German schools of the present day.

[1] *Die Klinik der Tuberculosis.* By Dr. B. Bandelier and Dr. O. Roepke, of Melsungen and Schoemberg. Würzburg: Curt Kabitzsch. 1911. (Sup. roy. 8vo, pp. 483. M. 9.50.)

FRACTURES AND DISLOCATIONS.

In the introduction to his book on *Fractures and their Treatment*,[2] Mr. Hogarth Pringle braves the charge of paradox, and declares his subject a new one. Of making many medical books there is evidently no end, but in this instance much learning is not a weariness of the flesh; it is a necessity of surgical existence. It may almost be said that the *x* rays have done for the surgery of broken bones what the microscope did for biology. A new world of exact knowledge has been opened up; refinements of diagnosis extending to minutiae of detachment and displacement, at one time—and not so long ago—undreamed of, are now within the terms of "reasonable skill and care." The new knowledge has led, as might be expected, to conflict of opinion, that still rages furiously, as to the indispensibility of exact existing anatomical form for perfect service of mechanical requirements in the skeleton. Is there to be a slavish submission to a demand for exact restoration of normal outline, or will it be enough to secure restoration of function, good useful limbs, and leave the question of form to the operations of those forces which originally determined the outline? In the meantime, fractures must be treated day by day, and, curiously enough, bones are healed and useful limbs restored in spite of the unsettled state of these philosophic theorizings. Mr. Pringle has seized the opportunity and written a good working textbook of British practice. It is big enough, but not too big, for a student to master. It is excellently printed in large type well displayed; the illustrations are not too elaborate, and are of practical utility. The author, in the matter of treatment, is an eclectic. He despises nothing traditional because it is old, but he has the resource of a mechanic in adapting simple appliances to exert the desired stresses. The old-fashioned Liston's splint, Syme's, Dupuytren's, and the "gallows" splints lose none of their virtues in the descriptions of their use found here; on the other hand, the extended use of multiple extension stresses in connexion with them, adapts them to the requirements of modern exact knowledge as to displacement. The virtues of the malleable iron splint do not, perhaps, receive their due meed of praise, but the advocates of operation upon simple fractures will find a sympathetic, if discriminating and cautious, exposition of its legitimate employment. Mr. Pringle's style is simple and direct. It is well suited to an account of complicated injuries, even if it does not rise to the heights necessary to make intelligible the obscure processes by which callus becomes bone. There is a chapter dealing with fractures in relation to the Workmen's Compensation Act, and useful tables compiled from German and French sources of the percentage disability involved by injuries. A bibliography completes a very sound and useful textbook.

What Mr. Pringle has done for British students has been done rather more elaborately, and with a curious restriction, for American students, by Dr. Cotton in his *Dislocations and Joint Fractures*[3] What the fractures in

[2] *Fractures and their Treatment.* By J. Hogarth Pringle. London: Henry Frowde, and Hodder and Stoughton (Oxford Medical Publications). 1910. (Roy. 8vo, pp. 396; illustrations 142. 15s.)

[3] *Dislocations and Joint Fractures.* By F. J. Cotton, A.M., M.D. Philadelphia and London: W. B. Saunders Co. 1910. (Roy. 8vo. pp. 654; 1,201 illustrations, 830 from drawings by the author. 25s.)

the middle of the shafts of long bones have to their credit that they should obtain no attention is difficult to see. Suffice it to say that, after all, the book covers almost the whole field, and does it extremely well. Dr. Cotton set himself the task of writing his monograph entirely on the results of his own and his immediate colleagues' experience. Afterwards he amassed the literature, and made as little use of it as he could help. Tradition, training, and a common material, notwithstanding the new aspect under which surgeons with the *x* rays at command for ten years, now view the subject, preclude any very drastic changes either in the description of classical bone injuries or in treatment. At the same time, the fruits of the method do appear in the fresh and practical turn given to such stereotyped knowledge as surrounds, for example, dislocations of the hip. It is impossible to traverse the whole field under the guidance of the author, but a few of his generalizations may be indicated. He is at one with the estimate of the *x* rays frequently indicated of late in these columns, that their proper sphere is not as a means of making a preliminary diagnosis, but as a court of appeal from clinical evidence, and especially as a test of effectiveness of reduction—a check upon after-treatment. Dr. Cotton does not feel, perhaps, as surgeons feel over here—that, if for no other reason, he must have a radiogram straight away to protect himself; but he does realize that *x* rays are better left in the hands of surgeons who understand them, and not allowed in the hands of patients or the patient's friends. That the author is no enthusiastic advocate of operating upon simple fractures is just possibly explicable by reason of his adherence to staples as a means of fixation, but there is plenty of indication in these pages that he has given the method full trial. He has found, for instance, as others have, that cases with original defect of callus take unusually long time to unite even after operation. He refers covertly to Lucas-Championnière when he says "it is not necessary to follow the frenzied lead of some of the French" in the use of massage and passive movement to the exclusion of absolute fixation. The author is no mean artist, and has aimed at making his illustrations an integral part of the text. Since many of the pictures relate to the details of manipulation, his intention was happy and his success is considerable. With adequate opportunities for putting his instructions into practice or watching their use, no student can fail to make himself so competent that the number of his cases requiring open operation shall not be above the minimum. The section on dislocations and fracture-dislocations of the vertebrae is a very good sample of the book. The radiograms are good, the photographs of attitude are good, the figures showing the positions and the grips for reduction are satisfactory, and the sixty-five pages devoted to the subject give ample room for the inclusion of all recent additions to our knowledge of the injuries. If there is a defect in the book it is that the splints needed in treating joint fractures receive rather scanty illustration. Certainly, Americans will not be the only readers of this excellent work.

Unlike the other volumes, Professor STIMSON's *Practical Treatise on Fractures and Dislocations*[4] has already proved its value by running through five editions. It is, indeed, a standard work on the subject. The sixth, revised and enlarged, edition is an invaluable work of reference upon the rarer fractures which even those of large experience can see but seldom. A good deal of the new matter deals with fractures and displacements of the bones of the carpus and tarsus. Since we have learnt how to diagnose fractures of the carpal scaphoid it has been found that the injury is by no means uncommon. Most surgeons have had to excise the fragments in old-standing cases, and have been gratified by the excellent results obtained even at very late dates. Similarly with dislocations of the semilunar bone; with or without fracture of the radius it is not infrequent, and the diagnosis can be made before radiograms are taken. The habit of radiographing all "sprains," if practised for a short time, will reveal a remarkable number of fractures, not only in the small bones, and will certainly suggest reflections on the number of cases that have got well in the past without rigid immobilization. The perusal of these pages will throw additional light, even for those who have taken the trouble to do this, upon the minutiae of diagnosis and prognosis, as well as upon treatment. Three conditions receive notice for the first time—fracture of the floor of the acetabulum, fracture of the internal epicondyle of the femur, and backward dislocation of the lower jaw; none of them is of very great importance, though it is worth noting that with the first of these injuries it may be still possible for the patient to walk immediately. The author has very little to say about operative methods, except for such undebatable conditions as fractured patella. He has not been greatly impressed by the "no splint and early massage" plan or by the "ambulatory" treatment of fractures of the lower limb, for which he thinks the claims made cannot be substantiated. There are a good many new radiographic plates in this edition. In spite of younger rivals the treatise will certainly command a wide circle of readers.

[4] *A Practical Treatise on Fractures and Dislocations.* By Lewis A. Stimson, M.D., LL.D., Professor of Surgery in Cornell University. London: Henry Kimpton; Glasgow: Alexander Stenhouse. 1910. (Roy. 8vo, pp. 896; 65 plates; 361 illustrations. 25s. net.)

IONIZATION IN SURGERY.

A PART of the book on *Ionic Surgery in the Treatment of Cancer*,[5] by Dr. BETTON MASSEY, of the American Oncologic Hospital, has already appeared in the *Archives of the Roentgen Ray* and other periodicals, so that his work is probably familiar to those specially interested in electrotherapeutics. The author now appeals to a wider public, and presents his method as a well-tried and successful agent. Briefly stated, it depends upon cataphoresis or ionization by powerful currents, producing its major effects by massive sloughing, and depending for its ultimate success upon "sterilization" of an outlying zone by diffusion of mercury ions, and by exciting phagocytosis; it is claimed also that the "absorbents"—presumably lymphatic and other vessels—are obliterated. "As compared," he says, "with excision by the knife, this method presents the following advantages: The cancer cells or germs are killed *in situ* at once and the surrounding absorbents sealed, preventing the operative reinfection of the cut edges. . . . it may be depended on to destroy infected glands in the axilla (not too close to the axillary vessels) more thoroughly than incision. . . ." The weakest part of the book is the account of malignant disease. It is not that the statements made are obviously wrong, but it seems to date from some ten years ago, or about the time when Plimmer's bodies were fashionable. When it comes to apparatus, the author is in his element. A good deal of the necessary instrumentation has been devised by him for the special requirements of his work, and reveals him as a man of practical resource, who has encountered and overcome many difficulties. Whatever is to be said about the permanent value of the method, it cannot be denied that there is every opportunity for a fair and thorough trial. There is a spice of danger not to be neglected. All sloughing methods admit the possibility of secondary haemorrhage, but here there is also the pernicious influence of currents of high voltage and considerable ampèrage (up to 500 or even 1,000) on the great nerve trunks, particularly the vagus. The precautions advisable are clearly indicated. It is an obvious disadvantage that a method should not be applicable to cancer of the *left* breast (at any rate in its "major," or full strength), because of the proximity of the heart. The author is under no serious delusions. He recognizes the field of the knife, though surgeons would find ample reason to war with him on the frontier question. He thinks, for example, that "early or doubtful" nodules in the breast are better treated by ionization—an opinion open to controversy from several points. He gives the case-histories of a large number of his patients, and illustrates a good many. Not a few of them stimulate scepticism; but, these apart, there remain so many cures and ameliorations that his claims deserve serious consideration. He seems to have his greatest success with rodent ulcers and epitheliomata of the face, but breast, tongue, tonsil, and uterine cases figure freely.

[5] *Ionic Surgery in the Treatment of Cancer.* By G. Betton Massey, M.D. New York: The A. L. Chatterton Company. 1910. (London agents, Siegle, Hill and Co.) (Roy. 8vo, pp. 258; 2 plates, 80 illustrations. 13s.)

PHOTOGRAPHY IN COLOURS.

The worker in colour photography will find in *Photography in Colours*[6] an ample fund of information on both the scientific and practical sides of his art. All the various processes are described; the structure of the different colour plates is shown by photomicrographs of the coloured starch grains, lines, dots, etc. The text is amply illustrated by diagrams, both coloured and otherwise, and the development and after-treatment of the plate in each process are described, and practical details which leave nothing to be desired are given. In addition, there are three beautiful full-page reproductions of colour photographs. Most workers will, we believe, agree with Mr. Lindsay Johnson that the autochrome plate gives the purest rendering of colour and the greatest gradation of shades. In our experience there is no shade of colour and no texture of surface, from the glitter on gilded armour to the polish of ivory, which cannot be faithfully reproduced by an autochrome plate. The applicability of colour photography to medicine and allied sciences is not discussed in this work, and in fact has not yet received adequate attention. Most beautiful autochrome photomicrographs of blood films, stained sections, stained bacteria, etc., can be obtained, whilst the representation of skin diseases and of tumours and other morbid conditions offers a wide field for colour work. A good autochrome of a leukaemic blood film gives a faithful picture of the coloured granules in the various leucocytes, and can be projected on the screen in all its original brilliancy. The main objection to the autochrome picture is its density, but, as the author points out, this is largely a question of correct exposure and practised development. If the finished plate be mounted in Canada balsam, the brilliancy is enhanced, and the resistance to the heat of the lantern increased. It is to be hoped that the author's anticipations of obtaining successful prints from coloured photographs will be speedily realized on the lines of the bleaching-out process elaborated by Dr. Smith. The chapters dealing with the production of colour prints and kinematography in colour are clearly and concisely written and plentifully illustrated. Chapter II, dealing with the physiology of the eye, colour sensation, and colour blindness, and containing much matter for controversy, suffers from condensation, but this is the less to be regretted, as it is more or less foreign to the subject of the work. We feel sure that the author of this admirable textbook will pardon us if we recommend the amateur, for whom it is written, to consult the extended literature of the subject before accepting in their entirety the theories of retinal image formation and colour sensation promulgated therein.

NOTES ON BOOKS.

The little work, *How to be Healthy*,[7] is advertised as containing "splendid lessons on health, temperance, moral instruction, etc." For our part, we would feel inclined to take a less exalted estimate of these lessons. In places they engender the dread suspicion that the Mr. Barlow of our youth had revived and turned his attention to elementary hygiene and kindred subjects. It may be said, however, that neither the perusal nor recital of the little book will interfere with juvenile sleep. It is harmless enough, and may even be of some slight use with a limited section of childhood.

During some years past there has been an increasing demand for domestic nurses with some previous training and knowledge of infants and children. For those wishing to undertake such a career *The Nursery Nurse's Companion*,[8] by Honnor Morten, can be recommended, as it gives details of the various institutions where such training can be obtained, its duration and cost. In addition there are chapters on such subjects as the care of infants, the management of the nursery, children's diet, children's clothing, the management of children, children's amusements, ailments and accidents, and others. On the whole these subjects are dealt with judiciously, and the advice given well adapted for the class for whom it is intended. It may be said, however, that the evils of masturbation in children are sufficient of themselves without the addition of gross exaggeration of its results, and that serious cases of mercurial poisoning have occurred in institutions where white precipitate ointment has been used for pediculosis in the absence of medical supervision.

Mr. Narramore's little book, *Preliminary Physiology*[9] is not intended for the student of medicine, but it provides a trustworthy guide to the schoolboy and the schoolmaster interested in very elementary science. There is really very little physiology in it; it is mainly concerned with giving an outline of the structure of the body. The illustrations are well selected and well executed, though we think that the reproductions of photomicrographs are hardly suited for the kind of student who will use the book—a student who, as a rule, has but little practical acquaintance with the use of the microscope. Outline drawings are much more intelligible, and therefore much more useful to this class of pupil.

[6] *Photography in Colours: A Textbook for Amateurs.* By George Lindsay Johnson. London: Ward and Co. 1910. (Cr. 8vo, pp. 151; 8 plates. 3s.)

[7] *How to be Healthy: A Book for Young Readers.* London and Edinburgh: McDougall's Educational Company. (Cr. 8vo, pp. 64, illustrated. 5d.)

[8] *The Nursery Nurse's Companion.* By Honnor Morten. London: Mills and Boon. (Cr. 8vo, pp. 149. 1s.)

[9] *Preliminary Physiology.* By William Narramore, F.L.S. London: Methuen and Co., Ltd. 1910. (Cr. 8vo, pp. 239; illustrations 103. 3s. 6d.)

MEDICINAL AND DIETETIC PREPARATIONS.

Iodival.

Very many attempts have been made to prepare organic compounds of iodine which should permit of this drug being given in sufficient doses without the disadvantages attending the use of the alkali iodides. We have received samples of such a compound introduced by Messrs. Knoll and Co. (8, Harp Lane, London, E.C.) under the name "iodival"; this is stated to be iodo-isovalerianyl-urea, $C_4H_8I.CO.NH.CO.NH_2$, which contains 47 per cent. of iodine. It is claimed that by the administration of this compound not only can iodine be given without alkali-metals, the substance passing unchanged through the stomach and being absorbed from the intestine, but also that iodine is carried to the nervous and fatty tissues to a much greater extent than when given as an iodide. The samples submitted were in the form of tablets containing 5 grains each, white, having a slightly bitter taste and a faint valerian-like odour, scarcely at all soluble in hot water or dilute acid, but almost completely soluble in alkali; after boiling the alkaline solution, addition of acid and an oxidizer liberated iodine in large quantity.

Witch-Hazel Soap.

Although definite active principles have not been identified in distilled extract of witch hazel, the favour in which it continues to be held is evidence of its possessing a beneficial action. To the many preparations of this extract intended for application to the skin there must now be added a toilet soap which Messrs. Armour and Co., Limited (Atlantic House, Holborn Viaduct, London, E.C.), are putting forward under the name "certified" soap. The samples examined by us show it to be a white soap, free from uncombined alkali, giving an excellent lather, and very agreeable in use.

THE ROYAL SOCIETY OF MEDICINE.

A special general meeting of Fellows of the Royal Society of Medicine was held at the Steinway Hall, Wigmore Street, London, on January 31st, with the President of the Society, Sir Henry Morris, in the chair.

A memorandum on the society's new premises, signed by Sir Henry Morris, stated that on October 28th, 1910, the council of the society entered into a contract for the erection of a building of three stories—that is, ground floor and first and second floors—at a cost of £27,286. This building included ample meeting room and sufficient library accommodation to last for many years—indeed, for as long as the present lease. The question of a third and a fourth floor was left undecided, but the council reserved the right to order an additional or third floor, according to the approved plans and at a fixed price (£2,051), and also the right at a later date to order another or fourth floor, according to plans approved, at a price fixed (namely, £2,347)—that is, at a total cost of £4,398 for the two additional floors. When the contract was signed, the council did not feel justified in incurring more expense than was absolutely necessary for the immediate needs of the society. It hoped that, before the limit of time fixed for the notice to be given for a third floor had arrived, it

might be in a position to order an additional floor or floors, if thought advisable. A third floor would provide a more spacious common-room for the use of Fellows, a room in which to conduct the examination of morbid growths and other specimens, a room for the use of the President and Presidents of Sections, a Secretaries' room (including writing and conference conveniences for the Sectional Secretaries), and a Fellows' smoking-room. Some, or all of these rooms would also, when required, provide additional storage for books. These rooms were all desirable for the full and satisfactory working of the society from the outset, and should be provided if possible. If the notice to erect the third floor was given on or before February 7th, the cost would be £2,051. If the additional floor was built now, and the Fellowship of the society increased and new sections were formed, it would certainly become necessary within a few years. The cost would then be at least £4,000, and the building operations would necessitate the closing of the society's house for nine months or longer. The council was of opinion that the erection of the third floor was desirable, but sought to ascertain the opinion of the Fellows before giving notice to the architect. The total cost of the building would then be under £30,000. The building fund at present stood at a total of between £10,000 and £11,000, made up as follows: Donations and subscriptions already received, £6,725 16s.; donations and subscriptions promised, £2,519 18s.; debentures surrendered, £1,450. As only 678 Fellows and Members had contributed, the council appealed to each of the remaining 2,700 to help by subscribing a sum of from 1 to 5 guineas annually for three or five years. In this way a large portion of the balance required might be provided before the building was finished. It should be remembered that before the amalgamation many Fellows belonged to several societies, and paid in annual subscriptions—few less than £5 5s., many as much as £10 10s., and even more. As these Fellows now obtained much greater advantages for a subscription of £3 3s., it was hoped that they would make a special effort in the manner suggested, or in some other way, to bring up the Building Fund to the requisite amount.

Sir HENRY MORRIS said that the council considered that it was desirable that the additional floor should be added, and the present meeting was called to consider the matter a week before the time that notice had to be given. He wished to emphasize the fact that there was no thought of making the new premises in any sense a club house; the building was to be entirely devoted to scientific purposes. Assuming that the Fellows wished to erect the third floor as suggested, he wished to point out that the financial position of the society was quite sound.

Sir THOMAS BARLOW, President of the Royal College of Physicians, moved a resolution confirming the decision of the council as to the desirability of building an additional story. He said that he was glad to hear that it was intended that the buildings should be altogether for scientific purposes and not in any sense of the word a club.

Mr. BUTLIN, President of the Royal College of Surgeons, in seconding the resolution, pointed out the advantages enjoyed by Fellows of the society for an annual subscription of three guineas. If the Fellows would not agree to pay a larger subscription, he suggested that the entrance fee might be raised, and future subscriptions put at a higher rate. Otherwise he hoped the members would accede to the invitation of the council, and give to the Society an annual sum for a certain number of years in order to help the building of the proposed new story.

Mr. G. H. MAKINS, in supporting the resolution, said that if the new story were provided it would lead to additional members joining.

Dr. THEODORE WILLIAMS suggested the formation of a special appeal committee for the raising of funds.

After Dr. J. G. DUNCANSON had spoken, Mr. L. A. BIDWELL addressed the meeting on certain financial questions.

Sir WILLIAM CHURCH explained that the particular financial method followed by the society was necessitated by the importance of keeping the society going on the present subscription paid by the Fellows.

The resolution confirming the decision of the council as to the desirability of building an additional story was then put to the meeting and carried *nemine contradicente*.

LONDON WATER.

EXPERIMENTS WITH TYPHOID BACILLI.

On January 27th the sixth report on research work was presented to the Metropolitan Water Board by Dr. A. C. Houston, Director of Water Examination. It deals with the comparative vitality of "uncultivated" and "cultivated" typhoid bacilli in artificially-infected samples of raw river water with special reference to the question of storage. In a previous report it was shown that when a large number of typhoid bacilli, previously grown on agar cultures, were artificially added to raw river water "stored" in the laboratory in partially-filled glass-stoppered bottles, the vast majority of the typhoid bacilli perished within one week. Thus in eighteen experiments, with an average initial number of 1,606,673 per c.cm. of river water, the average number one week later was only 531 (99·9 average percentage reduction). A few specially resistant bacilli persisted for several weeks either in 1, 10, or 100 c.cm. of water. In the 18 experiments, the *final* extinction of the typhoid bacillus, as judged by inability to isolate it from 100 c.cm. of water took place in the following periods:

In 4 out of the 18 experiments in			five weeks
,, 7	,,	,,	six ,,
,, 11	,,	,,	seven ,,
,, 16	,,	,,	eight ,,
,, 18	,,	,,	nine ,,

These experiments were artificial in two ways: In the first place, they were necessarily conducted in the laboratory in bottles, instead of in the open air and in reservoirs. Secondly, they were artificial, inasmuch as "cultivated" instead of "uncultivated" bacilli were used. By "cultivated" bacilli is meant typhoid bacilli which have been transported from their parasitic mode of growth, in the juices of the animal body, and induced to adopt a saprophytic existence in artificial cultures in the laboratory. By "uncultivated" bacilli is meant typhoid bacilli which have never been grown outside the animal body, and whose bodies are built up of materials exclusively derived from a human source. Through the courtesy of Professor McWeeney, of Dublin, an opportunity presented itself of comparing the vitality of "uncultivated" and "cultivated" typhoid bacilli in river water.

A TYPHOID "CARRIER."

Dr. McWeeney had under his care a girl whose urine was swarming with living typhoid bacilli, and who had apparently infected a number of people with typhoid fever.

On November 7th, 1909, he found that the blood of the girl agglutinated the typhoid bacillus in dilutions of 1 in 100, and on November 23rd he succeeded in isolating the typhoid bacilli from her urine. Later, on very numerous occasions, he found the typhoid bacillus (often in enormous numbers) in the girl's urine, but he has never succeeded in isolating it from her faeces. In December, 1909, the girl was admitted into the Mater Misericordiae Hospital, Dublin, and since then Professor McWeeney has kept her under continuous observation.

The following is Professor McWeeney's description of the characters of the typhoid bacillus isolated from the girl, and Dr. Houston's observations confirm this description:

It is a Gram-negative bacillus with the usual morphological and cultural characters of the genuine typhoid bacillus. It presents slight points of difference from the laboratory strain, which we are in the habit of using for the Widal test. These points, which are fairly constant, are as follows:

1. On such coloured differential media as those of Drigalski, Conradi, Fawcus, and China green, the colonies are, on the first day, a little smaller and more opaque. They increase rapidly in size after the first day, and the central more opaque nucleus of the colony becomes surrounded by a thinner translucent peripheral zone which often attains a considerable width. The colour of the Drigalski medium remains blue. On the Conradi, Fawcus, and China green media the young colonies show from the commencement an opaque greenish central area, with a very distinct colourless peripheral zone appearing after a few days and spreading over the medium. The agar is decolorized some distance around each colony.
2. The movements of the bacillus when taken fresh from a primary colony are distinctly less active than those of an ordinary typhoid colony of the same age. On subculture, however, the distinction is soon lost.

3. In ordinary peptone broth (reaction +10 Eyre) the growth is not so abundant in the first twenty-four hours as that of the ordinary typhoid. Subsequent subcultures, however, grow more luxuriantly.

4. When first isolated, the bacillus of the patient is hardly at all agglutinable, even by powerful antityphoid serum. After subculture every day for ten days, it undergoes agglutination as readily as the ordinary laboratory bacillus.

At the meeting of the British Medical Association in London in July, 1910, Dr. Houston was asked to open a discussion on "recently acquired knowledge concerning the bionomics of pathogenic organisms and its bearing on the spread of disease."[1] One of the subsequent speakers was Professor McWeeney, and his account of the case of the girl referred to induced Dr. Houston to ask him to send samples of her urine so as to allow the vitality of "uncultivated" typhoid bacilli in raw river water to be tested. The present report deals with the results of his investigations. That the urine of the girl (says Dr. Houston) contained typhoid bacilli is an incontestable fact. That she was the means of giving typhoid fever to no inconsiderable number of persons there seems to be no reasonable doubt.

The following is a summary of the history of the case, and of two experiments by Dr. Houston:

A girl contracted typhoid fever in 1903. In 1908 she entered the service of a farmer, and, during her stay of twelve months, nearly all the members of the farmer's family and their other employees suffered from typhoid fever. In 1909 she entered the service of a dairy farmer, who supplied milk to Kilworth Camp, and during the same year 27 cases of typhoid fever were notified, 25 of them occurring between July 8th and September 3rd. Dr. T. J. Browne, medical inspector of the Irish Local Government Board, who had charge of the inquiry, stated that all the other known channels of transmitting infection (other than milk supply) could be excluded. On November 7th, 1909, Professor McWeeney found that the girl's blood serum agglutinated the typhoid bacillus in dilutions of 1 to 100. On November 23rd, 1909, Professor McWeeney isolated the typhoid bacillus from the girl's urine. On August 9th, 1910, the "centrifugalized" deposit (3.5 c.cm.) from 389 c.cm. of the girl's urine was added to 5,000 c cm. of *raw* Thames river water, the number of typhoid bacilli working out at 770,000 per c.cm. of river water. A week later the number had fallen from 770,000 down to 4; the next week none could be found even in 100 c.cm., and on the twenty-fourth day from the start of the experiment, half a pint (about 284 c.cm.) of the infected water, which initially contained 218,680 000 typhoid bacilli per half-pint, was drunk without any apparent ill-effect. A similar amount of water was also drunk on the twenty-fifth, twenty-sixth, twenty-seventh, and twenty-eighth day. On August 19th the experiment was repeated, with a fresh sample of urine, the number of typhoid bacilli per c.cm. of river water being 1,650. A week later no typhoid bacilli could be found, and on the twenty-third, twenty-fourth, twenty-fifth, twenty-sixth, and twenty-seventh day after the start of the experiment half a pint of the infected water was drunk each day without any ill-effect. The rapid death-rate of the "uncultivated" typhoid bacilli in river water is highly satisfactory in view of the fact that the danger of drinking polluted river water is, so far as typhoid fever is concerned, entirely due to the possible presence of the typhoid bacillus in the water in its "uncultivated" state.

In a comparable experiment with "cultivated" typhoid bacilli (Experiment III), 5,000 c.cm. of *raw* Thames river water (R2060) were inoculated with a very recently "cultivated" strain of the typhoid bacillus, derived from the urine of the girl. Although "cultivated," its relationship to the human host was very close. The urine was drawn by catheter on August 8th, 1910, subcultures on malachite green bile-salt agar were made on the 9th; further subcultures were made on to gelatine, from the gelatine on to agar, and from the agar into the river water on August 17th, the interval between August 8th and 17th allowing of verification tests being applied to establish the identity of the microbe. Both as regards "time" and subcultivation, the "cultivated" typhoid bacillus bore a very close relation to the same bacillus in its "uncultivated" state in the urine. The number added per c.cm. of the river water was estimated to be 15,800. The bottle containing the infected water was kept in a dark cellar (temperature 64–67° F.). A week later the bottle was vigorously shaken, and a fresh estimation made. It was found that the number of typhoid bacilli had fallen from 15,800 to 200 per c.cm.—a reduction of 98.7 per cent. On the second, third, fourth, and fifth weeks further experiments were made, and in each case the typhoid bacillus was still alive in 1 c.cm. of the water. Six weeks after the start of the experiment the typhoid bacillus could no longer be isolated even from 100 c.cm. of the infected water. This is in harmony with the results obtained in connexion with Dr. Houston's earlier eighteen experiments with "cultivated" bacilli.

The experimental evidence, taken altogether, seems to show that "uncultivated" typhoid bacilli die much more speedily in *raw* river water than their "cultivated" brethren. Inasmuch as the danger of drinking polluted water is due to the possible presence of the former "uncultivated" bacilli, these observations are of far-reaching practical importance.

[1] BRITISH MEDICAL JOURNAL, November 12th, 1910.

CONCLUSIONS.

The following are Dr. Houston's conclusions: Assuming that the "uncultivated" typhoid bacilli from this particular girl's urine can fairly be compared with "uncultivated" typhoid bacilli in faeces and urine in general; that "uncultivated" typhoid bacilli perish in river water, of varying quality, stored in reservoirs, at approximalely the same rate as was found to be the case in the particular samples of river water stored in the laboratory, and that the negative results obtained in the laboratory may be accepted as conclusive, then, if the urine of the girl be considered grossly infective in its initial state by reason of its bacterial contents, and if also the individual who drank the water (less than a month after its infection) be regarded as susceptible to typhoid fever, surely it may be asserted with confidence: *That even a week's storage of raw river water is an enormous protection, and less than a month's storage is apparently absolute protection against typhoid fever.*

In Dr. Houston's Third Research Report 20 conclusions were given, of which the last 5 are here repeated:

An adequately stored water is to be regarded as a "safe' water, and the "safety change" which has occurred in a stored water can be recognized by appropriate tests.

The use of stored water enables a *constant* check to be maintained on the safety of London's water, *antecedent* to, and irrespective of, filtration.

The use of stored water goes far to wipe out the gravity of the charge that the chief sources of London's water supply are from sewage-polluted rivers.

The use of adequately stored waters renders any accidental breakdown in the filtering arrangements much less serious than might otherwise be the case.

The habitual use of stored water would lighten the grave responsibilities of the Water Board as regards the safety of the London water supply, and would tend to create a sense of security among those who watch over the health of the metropolis.

It is hoped, as a result of confirmation of these experiments, and the complete fulfilment of the storage policy now being adopted by the board, that the day is not far distant when these five sentences may be justifiably compressed into one statement, namely: The Metropolitan Water Board have now secured by *adequate* storage an "epidemiologically sterile" water (that is, a water containing none of the microbes associated with waterborne epidemic disease) *antecedent* to filtration, and the possibility of London water conveying epidemic disease may be finally dismissed from the minds of the inhabitants of the metropolis as a fear, which, on convincing experimental evidence to the contrary, has at last been definitely proved to be baseless. Should these conclusions be eventually accepted as sound, it follows that, apart from sentimental considerations and counsels of perfection, the most economical method of rendering an *adequately* stored, and therefore *safe*, water, reasonably free from colour and matters in suspension, must needs receive serious consideration as presumably the only needful *final* purification process to adopt. In these circumstances, the presence of organic matter or of harmless bacteria in the filtered water, even in excess of the standards usually adopted, need not, in the circumstances referred to, be considered a matter of vital importance.

The results of several further experiments which go to confirm those described in the text of the report are given in an addendum. In another addendum is given a summary of Dr. J. C. G. Ledingham's report to the Local Government Board on the enteric fever "carrier," in which current knowledge on the subject is reviewed. Dr. Houston goes on to say:

From the waterworks point of view, further information is most desirable on the following points:

(1) What proportion of persons employed, in the purification and distribution works, or having access to these works, are, or are likely to be, "carriers"?

(2) What proportion of the total population contaminating the *raw* sources of supply are likely to be actually suffering from typhoid fever, or likely to be in the carrier condition?

As regards both points, Ledingham's report forbids the hope that the number is altogether negligible. In respect of the latter, it is, however, a gratifying fact that so far, notwithstanding a diligent search, I have failed to isolate a single typhoid bacillus from the *raw* river Thames water.

THE COUNTY COUNCILS ASSOCIATION AND POOR LAW REFORM.

THE Executive Council of the County Councils Association, on January 24th, met to consider a report by its Poor Law Committee on certain proposals contained in the reports of the Royal Commission on the Poor Law and the Royal Commission on the Feeble-minded. The specific point to which the committee had confined its attention was whether, and, if so, in what way, the present duties of the boards of guardians could be discharged on the basis of larger areas than existing unions by the county councils without placing an undue burden of work on the councils or adversely affecting county administration. The committee had not considered general questions of Poor Law policy, and in presenting its resolutions did not profess to deal with London and the large towns.

The general conclusions of the committee were, briefly, that the system of Poor Law administration should be reorganized, that the present unit of area for Poor Law administration is often too small, and that the most convenient area would be that of the administrative county and county borough, and it was felt to be undesirable to have more than one authority with rating powers for the area of an administrative county. With regard to all grades of mentally-defective persons, the committee held that they should be removed out of the Poor Law altogether and placed in charge of the same authority that deals with lunatic asylums, and that a Government department ought to take over the work of the county councils in connexion with the asylums, subject to local inspection by a committee of the county council, or, at any rate, that some steps should be taken to relieve the asylums committees in respect of some of their existing duties. The committee also thought that the treatment of the unemployed, including habitual vagrants, should be under a Government department, with the assistance of local authorities in temporary cases. The committee presented an outline scheme of what it considered to be the best organization practicable in the counties, as it could not see its way to accept the proposals either of the Majority or the Minority of the Royal Commission, nor those of Sir A. Downes and Mr. C. Booth. The following is the scheme presented:

POOR LAW REFORM.

OUTLINE SCHEME OF THE COMMITTEE.

Poor Law Areas.

A. County or County Boroughs.
B. Urban and Rural Districts.
Both A. and B., where small, might be grouped.

Poor Law Authorities.

A. *County Poor Law Committee*, constituted by a scheme prepared and adopted by the County or County Borough Council and approved by the Local Government Board.
The Committee to consist of (1) members of the County Councils and of District Councils, and (2) other persons to be appointed by the County Council experienced in Poor Law and charitable work, including a fair proportion of women; a clear majority of the Committee to consist of members of the County Council, unless the County Council do otherwise determine, and in any case a majority of the Committee to be members of the County Council or of District Councils.

B. *District Poor Law Boards*, consisting of (1) all the members of the County Council elected for the District or resident in the District who consent to serve, (2) District Councillors as arranged by the scheme, and (3) not more than one-quarter appointed by the County Council from persons experienced in Poor Law and charitable work, including a fair proportion of women.

Powers and Duties.

A. To arrange for the classification and reorganization of all existing Poor Law buildings and institutions, and to establish new buildings and institutions.
To approve the admission of cases to institutions.
To administer the Poor Law funds, whether from Government grants or rates.
To make (or sanction) all contracts over £100.
To appoint (or sanction the appointment of) all officers.

B. To decideon all applications for out-relief, acting under general rules approved by Parliament.
To recommend (and in cases of urgency to commit) cases to institutions.
To manage such local institutions as may be delegated to them by the County Poor Law Committee.

Officers.

A. Poor Law Registrar and Clerk.
County Medical Officer of Health to superintend infirmaries and county and district medical staff.
One or more county inspectors.

B. Local Registrar and Clerk, District Medical Officers of Health and District Inspectors.

Finance.

Annual estimates of Poor Law expenditure, subject to revision after six months, to be submitted to the County Finance Committee by the County Poor Law Committee, and to be subject to the approval of the County Council.
A County Poor Law Rate to be made half-yearly by the County Council on the recommendation of the County Poor Law Board and the County Finance Committee, and to be levied by the overseers together with the County Police and Education rates; with power under special circumstances to levy special rates on particular areas.
All Poor Law loans to be sanctioned by the County Finance Committee and raised with other county loans.

N.B.—(1) All Poor Law Schools to be under Education Committee.
(2) Feeble-minded to be dealt with by the same authority as lunatics, but more economically.
(3) Unemployed, including habitual vagrants, to be under a Government Department.
(4) Scheme not to apply to London or large towns.

The committee admitted that the scheme required considerable explanation, but hoped that it would be accepted as a practical solution of a difficult problem.

The scheme, so far as it concerns the medical profession directly, would seem to involve placing the county medical officer of health at the head of all the medical arrangements, both institutional and outdoor, as he is to superintend infirmaries and both the county and the district medical staffs.

In submitting the report to the executive council, the chairman of the committee said that if the areas were to be enlarged, no area short of the administrative county would be satisfactory, and if this were adopted the authority must of necessity be the county council. As to the method of carrying out the work, however, the committee was at variance with both the Majority and the Minority Commissioners. The proposal of the Majority that the county council should have no control of expenditure and yet should be obliged to levy a rate appeared to the committee to be impossible. On the other hand the Minority proposal would entail great lack of co-ordination and would put far too much power in the hands of local officials. It was claimed that the committee's scheme would avoid overlapping, and by making the county council the supervising authority would bring about co-ordination between it and the rest of local government. Lord Belper said that it was a great recommendation of the scheme that it was elastic, and so would meet the great differences in circumstances in the various counties. The work of the county councils would be increased, but the work would be suitable to them, and the district Poor Law boards would make use of the members of the old boards of guardians. After some discussion the report was unanimously adopted by the executive council of the association.

SCIENCE NOTES.

MR. AUSTEN, in the *Bulletin of Entomological Research* for January, 1911, describes a new species of tsetse fly. Up to the present time the species has only been received from Southern Nigeria, where it is prevalent in the month of May, being very prone to attack travellers in canoes. At one place where the flies were encountered there was dense cover, consisting of long grass and water plants; while at another place the insects attacked an observer during heavy rain. The new species comes into the group of tsetse with dark hind tarsi, which includes *G. palpalis*, *G. tachinoides*, and *G. pallicera*. It resembles *G. palpalis* somewhat closely, but is brownish and usually somewhat larger, and has a broader head. Mr. Austen proposes to give it the name of *Glossina caliginea*.

LITERARY NOTES.

IT is announced that Dr. H. Cameron Gillies is editing, with translation, notes, and vocabulary, a Gaelic tract representing the mass of Gaelic medical MSS. preserved in public libraries and elsewhere. It is of the early sixteenth century, or perhaps earlier, and is written in a kind of shorthand which is to be reproduced by photography. The title is *Regimen Sanitatis*, and it is described as "The Vade Mecum of the famous Macbeaths, physicians to the Lords of the Isles and the Kings of Scotland for several centuries." It will be printed for the author by Messrs. Robert MacLehose, of Glasgow.

The late Dr. J. Frank Payne had a fine collection of old medical books. He left several ancient manuscripts, including *De simplice Medicina*, attributed to Roger Bacon, to the Royal College of Physicians of London, of which he was formerly librarian.

In the *Old-Lore Miscellany of Orkney, Shetland, Caithness, and Sutherland*, of July, 1910, some very interesting extracts were published from a diary kept by the late Dr. Edward Charlton during his visit to Shetland in the year 1832, to which reference was made in the BRITISH JOURNAL of November 26th, 1910, p. 1735. The present number (Part I, vol. iv), which has recently appeared, contains a further account of the young doctor's voyage to the far north, which has been taken from the same source. Dr. Charlton's visit coincided with the terrible storm which devastated the Shetlands in the summer of 1832, "at the mention of which during the next 100 years the Shetlander will tremble and pray that such a calamity may never occur in his days," and it is in connexion with this event that he mentions an almost unparalleled instance of the irony of fate. The loss of life amongst the fishermen of the islands had of course been very great, and "few cottages were there that had not to deplore the loss of a father, a brother, or a son. . . . It was in the month of January, 1833, that five of the lost men returned to their native islands. . . . But their skipper, the pride of the east coast fishermen, was not of their number. He had been the last to leave the boat, and as he ascended the vessel's side a tremendous sea threw his own frail bark high into the air, and it descended with resistless force upon the head of the unfortunate man when thus on the very threshold of escape." Besides the record of Dr. Charlton's visit to Shetland, the present number of the *Old-Lore Miscellany*, as usual, contains an immense amount of curious and valuable information. Mr. John Firth's article on "An Orkney township before the division of the commonty," which gives a vivid picture of the conditions of life in an old-world farmhouse, deserves special mention; whilst a most interesting account of "Rob Doun," the famous Gaelic poet, has been printed from the MSS. of the late Mr. George Sutherland Taylor. It should be added that this little magazine, which must be delightful to the antiquarian, is published in a most attractive form. The printing and paper alike are excellent, and the interesting photographs which serve as illustrations are beautifully reproduced.

Notwithstanding the short time it has been in existence, *The Child* has already won for itself a prominent place amongst the numerous magazines published for the instruction of parents and teachers in their duty towards children under their care, and the February number of this attractive periodical cannot fail to increase the high reputation so justly acquired by its predecessors. As usual, the list of its contributors includes many well-known names, and the high level of excellence attained by almost every item in its table of contents makes it somewhat difficult to select any single one for special praise. Mention must be made, however, of Dr. W. J. Butcher's excellent account of "Medical Influence in the School," from which it is possible to gain some idea of the immense benefits which have already resulted from the passing of the Education Act of 1907, and the subsequent creation of a medical department to the Board of Education. We learn from Dr. Butcher that during the last three years the influence of the doctor has undoubtedly led to a higher standard of personal cleanliness amongst the pupils of elementary schools; and there seems every reason to believe that, as time goes on, it may be the means of averting an infinity of suffering from the children of the poorer classes. The elementary school child is likewise the subject of Dr. D. M. Taylor's article on "Fatigue in School Children," in which he gives some useful advice as to the best way to "minimize fatigue in order to get the maximum of work, and to prevent fatigue becoming chronic and passing into the jaded state." The present number of *The Child* also contains interesting articles on "Affections of the Skin in Childhood," by Dr. G. Norman Meachen, and "The Fireproofing of Flannelette and the Protection of Child Life," by Professor W. H. Perkin; whilst Lord Guthrie has contributed a charming little sketch of his famous father, the Rev. Thomas Guthrie, "the apostle of ragged schools."

In a curious poem entitled *Callipaedia: or, An Art how to have handsome Children*, written in Latin by Claude Quillet, first a physician and afterwards a priest, and first printed at Leyden in 1655, there is a slight reference to the relation of alcohol to degeneracy. We quote from the second edition of an English version published in London in 1718. In the Second Book the following counsel is given:

> Avoid, when flush'd with Wine, the Marriage Bliss,
> Nor soil your pleasures by a drunken Kiss.
> For filthy Births, such indigested seed,
> And future Gouts, and knotty Joints, will breed.

Quillet, however, believed in wine as a help to the practice of the "art" of which he writes. Indeed, he seems to have thought that in its right use lay the solution of the problem of the causation of sex which is still a subject of active speculation to many. Some of his precepts may be quoted:

> Sufficient for the Nuptial Joy's the Vine
> But most, *Oh Burgundy!* thy Nectar warms
> Their Hearts, and burnishes their Bridal Arms.
> Both bright *Champagne* with equal vigour fills
> And the rich Cluster of the Aisian Hills.

The ladies, too, who wish to present their lords with heirs male are encouraged to fortify themselves with the juice of the grape:

> And you, ye Wives, who with your Husbands join
> To pray for sons to prop an Ancient Line,
> At Meals, with Sparkling Wine rejoice your Souls
> And freely pledge 'em in their modest Bowls.
> Nature, by this, the Genial Heat will feed,
> And urge the Womb to seize the Manly Seed.
> By this for Males 'tis fitted; but beware,
> And be'nt too lavish, as you shou'd not spare.
> For when the Soil's with too much Moisture drench'd
> The Native Warmth in both alike is quench'd.
> Nor have they Strength, when they to Hymen pay
> Their Vows, Foundations for Strong Males to lay.

It may be added that Quillet, with all his questionable notions and absurd superstitions, was really a sort of pioneer in the field of eugenics, and we hope to give a fuller account of him at a later time.

DR. THOMAS LAPRAIK, of Glasgow and Cambuslang, left personal estate valued at £1,853.

A PAGEANT representative of the evolution of trained nursing is to take place at the Connaught Rooms, Great Queen Street, W.C., on the evening of Saturday, February 18th. The central figure will be the Goddess Hygeia supported by the four Elements, and having in her train the Spirits of Nursing and Science with their attendant attributes. A prologue having been delivered by the Goddess, the Spirit of Nursing will describe how her endeavours to aid the sick have been obstructed by ignorance. The Spirit of Science will then show how she can supply the knowledge lacking. Processions of notable persons will then pass before the Goddess—saintly men and women of bygone days, inspired by the Spirit of Nursing—and silently plead for fuller knowledge for their successors. Matrons, preceded by the banner of "Education," will then petition for definite curricula, and under the banner of "Nurses and the Community" trained nurses will demonstrate that their work is indispensable to the nation. Lastly comes the banner of "State Registration," in support of which this pageant is being organized. Upwards of 200 ladies and gentlemen will take part in the pageant, which is under the patronage of Lord Ampthill and other persons interested in the organization of the nursing profession. Tickets can be obtained from the Pageant Secretary, 431, Oxford Street, W.

British Medical Journal.

SATURDAY, FEBRUARY 4TH, 1911.

TUBERCULIN AND TUBERCULIN DISPENSARIES.

THE international crusade against the spread of tuberculosis proceeds apace, and the lay mind is slowly but surely becoming imbued with the practical value of early recognition of the disease. The results of sanatorium treatment point unmistakably to the desirability of early segregation in recognized, or even suspected, cases. But sanatorium accommodation is limited and expensive, and even in the partially endowed institutions the length of time necessary for nominal completion of the cure is grudged by the great majority of middle-class patients. Faith in medicinal treatment has been generally shaken by the reiterated assertions of authorities in all countries that no real remedy exists. The universal craving for such a remedy was made very manifest by the rush to Berlin when Koch first stated his belief that his original tuberculin had the power of annihilating the activity of tubercle in the living body. The reaction that followed the gradual discovery that his tuberculin was not a remedy, although it had a manifest effect upon tuberculous tissue, was almost as universal, and the treatment by injection was given up by the great majority of the profession. But not by all. To a considerable number of clinical workers the lines laid down by Koch appeared to be right, although they did not lead to immediate success in practice. Different methods of preparation and greatly restricted doses were employed until a definite standpoint for efficient treatment was reached. At the present time the therapeutic use of tuberculin has become established, especially in Germany, and results are accumulating which should convince every one, except the incurable sceptic.

In 1902 Dr. Camac Wilkinson, then lecturer in medicine in the University of Sydney, and physician to the Prince Alfred Hospital there, published in these columns some observations on tuberculin as a remedy for tuberculosis of the lungs; we gather that at that time he used chiefly the preparation known as T.R., but also the Old Tuberculin (T.A.). He was able to say that his personal experience after five years' careful watching was that tuberculin properly used had a very high value in the treatment of pulmonary tuberculosis. He had then treated nearly 70 cases, and had always observed improvement provided there was no mixed infection. Five years later Dr. Wilkinson published in this JOURNAL a plea for the use of tuberculin within and without sanatoriums.[1] In this paper he maintained that it was an invaluable agent in the selection of suitable cases for sanatoriums and a ready means of gauging the success or failure of treatment, while it was quite harmless to patients not suffering from tuberculosis. He admitted that it was more difficult to express a confident opinion as to the value of tuberculin as a curative agent, but quoted the evidence of several physicians of large experience who, sometimes after a period of discouragement, were using it systematically. At the annual meeting of the British Medical Association in London last year Dr. Wilkinson made two communications on tuberculin, in pulmonary and laryngeal tuberculosis respectively.[2] Speaking of the results he had obtained in laryngeal tuberculosis, he said that nothing had done so much to strengthen his firm conviction of the value of large doses of tuberculin in pulmonary tuberculosis as the extraordinary effects he had closely watched week after week and year after year in laryngeal tuberculosis. In 1908 Dr. Wilkinson published a book, entitled *Treatment of Consumption*, in which the method he then followed in using tuberculin was set out. He made the injection into the forearm or outer part of the upper arm after previous sterilization of the skin; no serious trouble followed even well-marked reactions, and providing they were not too severe nor too frequent he became convinced that an occasional reaction with fever often did great good, especially in the early stages of the disease and in the earlier stages of treatment. As to the dose and the interval at which it should be repeated and the rapidity with which it might be increased, he confirmed Koch's original warning that there can be no routine method; each case must be treated on its own merits. Judging by the records of cases, he would appear to have been in the habit of beginning with about 0.001 gram, rising gradually to as much as 1 gram. If no reaction occurred after the first dose, he generally gave another and larger dose in three or four days; if a reaction occurred, the interval was increased according to the degree of fever. The full course of treatment might take four, six, or eight months, or longer, but, as it could be carried out without interfering seriously with a man's business, this was not considered a matter of great importance.

In a review published about three years ago we called attention to a work by Drs. Bandelier and Roepke,[3] both of them engaged in the control of sanatoriums, containing much useful information as to the practical uses of tuberculin. The favourable opinion of the book then expressed has been practically endorsed by the demand for no less than five editions in Germany and the appearance of translations into several foreign tongues.[4] The multitude of experimenters and clinical observers who are at work upon the phenomena of serology will doubtless carry the sum total of knowledge still further before the book is many months older. From the first Drs. Bandelier and Roepke have pleaded for the extended use of tuberculin both for diagnostic and for therapeutic purposes. The somewhat dogmatic tone adopted in the earlier editions is justified in the present one by the records of results achieved, not by the writers alone, but by leaders of clinical study in many of the more important medical centres in Germany. An interesting feature of the later editions has been the support given to the authors in their work by the late Professor Koch, and the preface written by him for the third edition appears again as a tribute to his memory in the new one. No one

[1] BRITISH MEDICAL JOURNAL, 1907, vol. i, p 1298.

[2] BRITISH MEDICAL JOURNAL, 1910, vol. ii, pp. 1055, 1705.

[3] BRITISH MEDICAL JOURNAL, December 21st, 1907.

[4] *Lehrbuch der specifischen Diagnostik und Therapie der Tuberculose.* For Practitioners and Students. By Dr. Bandelier of Schömberg and Dr. Roepke of Melsungen. Fifth, enlarged and improved, edition, with a preface by Professor Koch. Würzburg: Curt Kabitzsch. 1911. (Sup. roy. 8vo, pp. 304. M. 6.60.) The English translation, by Dr. Egbert S. Morland of Arosa, was made from the second edition and appeared about a year ago.

realized more fully than Koch that his own researches into the workings of tuberculin were imperfect, and wanting in that scientific explanation which the labours of Wright, Wassermann, and many others are gradually unfolding. Recognizing the diagnostic value of the new tuberculins, he strongly advocated the systematic instruction of the profession in their use, and at the same time uttered a word of warning as to the danger of using any but well authenticated material. He fully agreed with the principle of progressive dosage. Experimental research has been carried forward vigorously in the German schools of medicine, more especially in the direction of practical results. Some of the more theoretical lines of investigation, such as the determination of the opsonic index, and more recently the theory of fixation of complement, do not appear to have been followed with the same interest.

The keynote struck by Bandelier and Roepke is the routine use of injections of tuberculin by the profession generally, and the universal instruction of the general practitioner in the technique of the treatment. Post-graduate classes and clinical lectures are to provide it. The much debated question of the use of tuberculin in out-patient practice is summed up strongly in favour of its adoption, and it would appear to be already in far greater use in Germany than in this country. It seems probable, however, that this state of things may shortly be changed. Some time ago Dr. Camac Wilkinson established a tuberculin dispensary in Kennington Road, S.E., and he is now chairman of the executive committee of a Tuberculin Dispensary League which would appear to be desirous of establishing dispensaries in various centres. A tuberculin dispensary we understand to be primarily a place where patients suffering from pulmonary tuberculosis are treated by tuberculin of one kind or another by gradually increasing doses in the manner briefly outlined above. We gather, however, that it is also a place where persons who have been exposed to infection (contacts) may receive a dose of tuberculin for diagnostic purposes, and where if a reaction occurs they are treated by the method of progressive doses. It is stated that tuberculin dispensaries have been established at Aldershot, Street (Somerset), and Irvine (Ayrshire), and proposals have been made for the establishment of such dispensaries at Leith, Portsmouth, and Poplar.

Dr. Robertson, M.O.H., Leith, has made a report to the Public Health Committee of that burgh, in which he stated that he had begun the use of the method in Leith, which he thought would be a favourable place for testing its value. He accepted the statement that, beginning with a small dose and gradually increasing it, the patient was eventually able to tolerate a very large dose. He also expressed the opinion that the application of tuberculin injections in the detection of contacts was a valuable method, and that, if a contact showed a reaction, it meant that he was affected with tuberculosis, and that, the existence of the infection having thus been established, treatment by progressive doses of tuberculin should be proceeded with. If the claims for this method were substantiated, the disease could, he believed, be prevented from spreading amongst the members of a tuberculous household by thus rendering them immune. A proposal to institute a tuberculin dispensary at Portsmouth was recently brought to the notice of the Town Council in a report by the medical officer of health, Dr. Mearns Fraser, recommending the establishment of such an institution. From a newspaper report of a meeting of the Portsmouth Town Council it would seem that the scheme found favour with many of the councillors, but some very pertinent questions were asked, which showed that some at least of the council were determined to look carefully into the matter before committing the town to the scheme. Dr. F. W. Alexander, M.O.H. for Poplar, has also presented to the council of that metropolitan borough a report containing a similar recommendation. Dr. Alexander excuses the length of his report on the ground that the council should be in possession of recent medical opinions on the subject of the prevention and treatment of tuberculosis, but he appears to have confined his references to the "opinions and experience of undoubted experts," largely to extracts from Dr. Camac Wilkinson's writings and to the report compiled by Dr. Mearns Fraser for the Portsmouth Borough Council; in an appendix Dr. C. W. Hogarth of Greenwich gives his opinion on the value of the method which he has used in his private practice.

It appears probable, therefore, that in the near future the method of treating individuals affected with or suspected to be infected with tuberculosis by progressive doses of tuberculin on the lines laid down by Dr. Camac Wilkinson will receive a more or less extensive trial, and the results, if carefully recorded, as no doubt will be the case, must contribute to the formation of a settled medical opinion upon the value of the methods and of the risks which may attend its general application. At present medical opinion is in a state of suspense. One fact, however, appears already to stand out clearly, and that is that only early or suspected cases are suitable for tuberculin treatment at a dispensary, and it would be well to refuse such treatment to all patients presenting evidence of mixed infection until more definite experience has been gained.

POOR LAW MEDICAL OFFICERS.

AT p. 284 will be found a long list of recommendations put forward by the council of the Poor Law Medical Officers' Association of England and Wales referring to the conditions of service of the Poor Law medical officers. It is not at all improbable that at first sight and in certain quarters there may be an inclination to consider that the council has gone to an unnecessary length in its demands. Such an idea, however, can only arise from an insufficient knowledge of the present conditions of the Poor Law Medical Service, and a careful consideration of the twelve recommendations must lead to the conclusion that the time has come when a firm and decided stand needs to be taken for reform. It would be possible to quote numerous statements from both the Majority and the Minority Reports of the Royal Commission on the Poor Law showing the eminently unsatisfactory conditions under which the Poor Law medical officers labour. It is indeed almost incredible that any body of professional men should have been willing to submit so long without not merely a protest, but a definite revolt against some of the disabilities which are referred to in the recommendations.

The amount of remuneration of district medical officers is admitted by the Royal Commission to be often a matter for reasonable complaint, but even this is not the worst aspect. When the salary of a district medical officer is considered by boards of guardians,

it is quite a common thing for the guardians to say, "Why should we pay more when we can get as many medical officers as we need for less?" Such a method of cutting down and taking advantage of competition hardly ever enters into the question when guardians are appointing their clerk or even their tramp masters; in practically every case a reasonable wage or salary is first decided. When a district medical officer is to be appointed the main consideration seems often to be, What is the lowest possible amount for which we can get the work done? The eleventh recommendation is to the effect that in no case shall it be lawful, by bargaining with individual medical officers, to reduce the amount paid in medical salaries for attendance on the poor unless it can be shown that the sickness claims have diminished. It is little short of a disgrace that there should be any necessity for such a recommendation, and yet there is not the least doubt that such a method of bargaining by boards of guardians has been by no means rare, and it is difficult to reconcile any real concern for the physical health of the poor with a system which practically says that the cheapest possible medical treatment is good enough for the pauper.

It is high time, too, that some definite understanding should be reached on the questions that are constantly arising under the head of security of tenure. It is often said that district medical officers ought to rest and be thankful for the amount of security of tenure that they enjoy, but it is clear that there are numerous loopholes by which guardians may often take an unfair advantage and escape their liabilities. It is quite possible that, at no distant future, whether the recommendations for reform made by the Royal Commission are followed or whether reform is left to the Local Government Board, there may be extensive rearrangements of districts and areas of administration, and the question of compensation when the office of a Poor Law medical officer is determined on public grounds, apart from any personal misconduct, is likely to become of even more urgent and frequent importance than it is at present.

The difficulties under which the district medical officer labours when he requires the assistance of another medical man, and especially in the provision of anaesthetists, must often be prejudicial to the patients, and the injustice that often occurs when a district medical officer receives an urgent summons to attend a confinement without an order needs to be forcibly brought home to the proper authorities. It is intolerable that a district medical officer should be subject not only to public odium, but even to censure by the guardians, if he refuses to attend a confinement without an order, and yet, if he does so attend and the case proves to be an improper one from a Poor Law point of view, he should be left to obtain his fee as best he can.

These are only some of the matters on which the Council of the Poor Law Medical Officers' Association has made recommendations, but in themselves they afford quite sufficient reason for taking a determined stand for reform. The greater part of the time of the Special Poor Law Reform Committee of the British Medical Association has so far been taken up by questions that seemed to be of immediate urgency arising under State sickness insurance which must indirectly, but none the less seriously, affect the Poor Law Medical Service. The committee has still to consider many other points included in its reference, and the co-ordination of the Poor Law Medical Service with other medical services will doubtlessly involve full consideration of many of the disabilities of which the Poor Law Medical Officers' Association justly complains.

RADIUM IN GOUT AND RHEUMATISM.

DR. W. HIS, professor of pathology and therapeutics in the University of Berlin, delivered an address before the last meeting of the Berlin Medical Society on the treatment of gout and rheumatism by radium, which contained so many points of clinical interest that it has seemed well to publish an English version simultaneously with the appearance of the German text in the *Berliner klinische Wochenschrift*. Professor His speaks with all necessary reserve, but it will be seen that he has become convinced that in radium properly applied we have a valuable adjuvant in the treatment of chronic rheumatism and gout. In old-standing cases where advanced structural changes in bones and ligaments have been produced, little or nothing can be expected, but in the earlier stages he shows that highly satisfactory and gratifying results may be obtained in two groups of disease which are a trial of patience both to the practitioner and to the patient.

"SHUTTLE-KISSING."

THE practice of sucking the weft through the eye of the shuttle—known as "shuttle-kissing"—which has often been denounced as unhygienic and detrimental to health, has recently come again to the fore in the centres of the weaving industry. The Medical Officer of Health for Bacup (Dr. John Brown) recently reported three deaths from consumption in weavers who, it appears, had all "kissed" the same shuttle, and the inference is suggested that infection may have been conveyed from one to the others by this means. However this may be—and the possibility cannot be doubted—it would be well if the discussion which has arisen on the dangers of "shuttle-kissing" were to lead to this antiquated and elementary method of drawing the weft through the shuttle being discarded entirely. For the benefit of those who are unacquainted with the practice, we may explain that the shuttle, like a needle, has to be threaded, the end of the weft thread being drawn through a hole or eye in the side of the shuttle. This is done by the weaver applying his mouth to the hole and drawing the end of the thread through by suction. The threading of the shuttle may require to be done frequently—a worker who writes on the subject in a North Country trade journal speaking of the necessity possibly occurring fifty times in the hour. It is obvious that this constant suction may have an injurious effect on the lungs, apart from the fact that dust and fluff from the weft is almost certain to be drawn into the air passages. When the same shuttle has to be used by two persons, as when the weaver is assisted by a "tenter," there is an added danger if one of these should be suffering from some communicable disease. This danger is especially to be considered in the case of a weaver who takes the place of one whose absence is due to illness—such, for example, as influenza, or, it may be, consumption. With regard to the latter disease—consumption—there are, it is true, many circumstances, both in the conditions of work and of the home, which tend to make the weaver especially prone to become consumptive, but this very predisposition makes it all the more desirable to guard against any practice which may be the means of introducing the infection. There can be no question that it would be of great advantage to the workers in this industry, from the point of view of health, if shuttle-kissing were abolished; but, as

a weaver of twenty years' experience says, it is more a question of production both to the weaver and the employer than the matter of good health. "I really believe," he says,[1] "that the weavers would rather suffer from tic, toothache, decayed teeth, and face and lung troubles, and pay the doctor or dentist part of their wages, than allow their earnings to suffer a few pence as a result of any invention for the betterment of their health." On the other hand, as the same writer points out, the employers would look with disfavour on anything which would be detrimental to their profits. It seems, however, possible that in this matter the health of the workers may be safeguarded without detriment to the pecuniary interests of either workers or employers. There are self-threading shuttles in use, and more than one automatic shuttle-threader has been recently invented. It is, of course, important that any substitute for mouth threading of shuttles should act so efficiently that there is no loss of time involved in the use of mechanical means, and the cost of the machine must not be excessive, but if the appliances at present available do not quite fulfil the requirements there is no doubt that a demand for automatic threaders would soon produce a satisfactory invention. The Bacup Borough Council, on the advice of the medical officer of health, who has taken the matter up energetically, has issued to the cotton manufacturers in the borough a circular calling attention to the fact that shuttles may be dirt and disease carriers, and undertaking to disinfect all shuttles which have been used by weavers suspected to be suffering from phthisis or other infectious disease. Dr. Brown is at present engaged in some experiments and research in regard to the bacteriological aspect of the subject, and it is to be hoped that his endeavours to draw attention to the evils of shuttle-kissing and the possibilities of obviating these may lead to the abandonment of a practice which has long been recognized as detrimental to the health of the weavers.

[1] *Factory Times*, January 20th, 1911.

FEMALES AND MALES.

"We may possibly look upon ourselves at the present moment as being at the zenith of a female oscillation." Such words, in their proper context, cannot but afford a modicum at once of consolation and of hope to poor downtrodden man in these days of feminine ascendancy. They may seem also to hold out a prospect to cheer the souls of Cabinet Ministers, but they were penned by Dr. R. J. Ewart in a recent contribution to *Nature* (January 5th), dealing only with the numerical relation of the sexes. His ideas are not altogether novel, yet they are worth repeating, for they throw light on an interesting, even important, sociological question which is usually dismissed as a matter of course. The nature of the factors regulating sex equilibrium has always been a mystery. Why the equilibrium should be one of approximate equality in man and most animals, while strikingly unequal in others, is a point which Dr. Ewart does not touch upon. History teaches and statistics show that men are killed off in greater numbers than women, and were this not compensated for, women would in course of time far outnumber men. An obvious compensation is the continuous excess of male births, but this is a tendency which, if unchecked, would lead to a preponderance on the other side, so that this in turn requires some restraining influence. That both tendencies are held in check by some guiding mechanism is presupposed by the facts of the case, and it remains to determine what it is which limits these oscillations on one side or the other. According to Dr. Ewart, "the history of any race in its sex composition would show us that such oscillations have occurred, modified, no doubt, in their regular sequence by such factors as war and famine. These oscillations of sex balance have brought with them certain changes and movements in the people themselves; an excess of males would naturally tend to produce war, either civil or foreign, whilst a superfluity of females is easily associated with upheavals in the domestic policy of the community. There is no doubt that, could we trace the history of the world, or any section of it, we should see that man simply reacts to certain variations which are inevitable sequences in the establishment of this balance." Here it is evident Dr. Ewart is dealing with surmises of which he does not give confirmation; later he comes to figures, if not facts. At the present moment in Britain there is an excess of females, but at the same time there is also an excess of male births in the ratio of 1,033 : 1,000. By the end of the fifth year this excess is equalized by the greater number of deaths amongst male children. During the next ten years the latter assert their superiority to a slight extent, but from the fifteenth year the females become predominant. For the purposes of mating the male may be taken as a few years older than the female, a postulate which may well be allowed, and this further disturbs the sex balance. There results in the community the existence of women to whom marriage is not possible, and whose energies are exerted in other directions. It is, apparent, therefore, that just now Nature is endeavouring to counteract the excess of females by the production of a slight excess of male children; and here we come to a curious fact. Figures are taken from *An Inquiry into the Birth Conditions in the Town of Middlesbrough*, which show that up to the age of 25 women produce more female children than male, but after that age the reverse. There is thus in Middlesbrough, at any rate, a tendency for young women to produce female children, and for older women to produce male children. Now when women are in the majority, as at present, there is less demand for them; they will marry late, and so, if Middlesbrough affords a fair sample, produce an excess of male children. On the other hand, when they are in the minority, they will be eagerly sought by the males, and so tend to marry early and produce female children. With regard to the age of the male parent, the influence seems to be analogous to that of the female; but Dr. Ewart is not by any means clear on this point. He says that with a mother of 20 and a father of 30 the chances of a boy or a girl being born "are about as equal as Nature can make such a problem." From such a passage we would gather that youth in either parent tends to the production of female children, and that the determination of sex is a matter of the mean age of the parents. The explanation appears to be almost too simple to be true. Dr. Ewart concludes by stating that under the present circumstances "an average marriage-rate (!) of between 27 and 28 years should produce a population in which the males are at all periods in excess of the females."

THE TEACHING OF SWIMMING.

Swimming, which comes natural to the majority of mammals, is an art which has to be acquired with difficulty by man, and there has long been much controversy as to the best way of teaching this art. It is commonly supposed that man's difficulty arises from the comparative weight of his head and brain, and this is, of course, an element in the problem, although, as a little reflection will show, it is only one of several. Thus, man is disadvantageously placed for swimming

in the prone or natural position by the position of his mouth and nostrils at the lower part of the face. In order to breathe, he must keep practically the whole of his head and face clear of the water, whereas the more prognathous quadrupeds need only keep the tip of the snout above the surface. Again, a quadruped in swimming, simply continues the alternate movement of the limbs to which it is accustomed, while man has to acquire a new and unaccustomed co-ordination of muscles. It is on the latter account that many teachers advocate the learning of the necessary movements before taking to the water at all. This idea of "learning to swim on dry land" has long been a target for the humorist, but its advocates have a notable recruit in Dr. F. W. Alexander, the Medical Officer of Health for Poplar, who has devised a very ingenious contrivance which can be used for instruction either on dry land or in the swimming bath. As Dr. Alexander points out in an explanatory pamphlet, all such devices as cork jackets and bladders prevent the natural submergence of the body and militate against the learner's acquiring the proper "balance" which is the essence of swimming. With his apparatus, the learner is "slung" in the water by a broad, flexible, and adjustable support, which gives him at once confidence and balance, and leaves the instructor quite unhampered. It is a great improvement on any of the artificial aids to swimming that we have seen.

THE METABOLISM OF URIC ACID.

FOLLOWING the work of Wiechowski, some interesting observations have been made by Ackroyd, a British Medical Association Scholar, on the metabolism of uric acid.[1] It is only three years since Wiechowski indicated that no satisfactory proof had been adduced that urea was the end-product of purin metabolism in mammals. He further put forward the view that normally the end-product is really allantoin. Although this substance had previously been isolated from the normal urine of various animals by several workers, its presence was not regarded as normal, and was ascribed to exceptional circumstances. Wiechowski's view is supported by his own experimental work, as well as by that of others, who have shown that purin bases administered to dogs by the mouth are excreted almost entirely as allantoin. In man the condition is different, the excretion being mainly in the form of uric acid. Allantoin, however, can be demonstrated in normal human urine, and it is found that, on the average, about 10 milligrams a day are excreted. Influenced by the consideration that uric acid metabolism may proceed in two directions—the one leading to allantoin, the other to urea or intermediate bodies—Ackroyd attempted to determine whether dogs had the power of converting uric acid into substances other than allantoin. He chose the method of perfusing the excised liver as being the least likely to upset the normal ferment action. From his experiments he found that when perfused with normal saline the liver produces a small constant quantity of allantoin; further, that the liver has the power to destroy uric acid and convert it partly into allantoin. In no instance could the presence of urea be demonstrated. The fact, however, that all the uric acid administered could not be recovered in the form of allantoin, seems to indicate that metabolism proceeds in some direction other than towards the formation of allantoin or urea. The matter is of considerable interest, and further experiments are being conducted on rabbits with the same object in view.

[1] *Bio-Chemical Journal*, October 17th, 1910, pp. 217-24.

THE FOURTH ERA IN SURGERY

AT the last Annual Meeting of the Association Professor Crile read a paper dealing with certain factors that influence the immediate results of surgical operations.[1] He demonstrated the severity and the close similarity of the effects upon the cortical cells of such noxious conditions as infection, anaemia, shock, and "fear." He was able to show that vulnerability held an inversely proportional relation to the phylogenetic "youth" of the cell—that is to say, the greater the refinement of function served, the more recent its evolution, the greater the susceptibility to deleterious influences. His conclusions led him to herald the "era of physiology, the interpretation of the laws of life itself." He described a dramatic period of surgery, based on gross anatomy, culminating in the days of Cooper and Pott; a period now reaching its zenith under the dominion of "the great triumvirate of anaesthesia, asepsis, and pathologic anatomy"; and founded his hopes of the future upon a new interpretation of the discovery that man is not an isolated phenomenon in nature. The microscope, he would tell us, has held the eye so exclusively fixed upon bacterial and other cells that no clear vision of "the vital force" itself has been caught. Professor Crile, however, has seen his vision with the aid of an objective, and it seems that "the fourth or physiologic era in surgery" had an earlier prophet in a surgeon of the vigorous American school. In a little volume of collected papers that takes its title from an essay on this subject,[2] Professor Robert T. Morris, of the New York Post-Graduate Medical School, tells us that the surgery of the first or Hippocratic era was "heroic"; Vesalius fathered the second or "anatomic"; Pasteur and Lister inaugurated the "pathologic," whilst the latest or "physiologic" we owe to Metchnikoff and Wright. Professor Morris saw his vision in the operating theatre and the ward to which his cases of acute appendicitis came. He learnt that the smaller the dose of anaesthetic drug, the less the damage done to the tissues, sound or unsound; the quicker he "got in and out" of the abdomen, the better the immediate results of his operative interference. He learnt that all he had to do was to "turn the tide" in favour of the defensive agencies of the patient himself. He awoke to the fact that with time and timely help the human bodily tissues could rid themselves alike of macroscopic rubbish and microscopic raiders. He learnt from clinical observation what Crile deduced from histological changes in the cells of the brain; and both have stated what is already in almost all men's minds. Surgery must still be "heroic"; surgery can never afford to neglect gross anatomy; pathology is still the basis of rational practice; but the refinement of technique, in the broadest sense of the word, by which alone we can hope to minimize mortality, depends upon perfected appreciation of the capabilities and susceptibilities of the normal cell-complex which makes up the human body.

CANCER IN THE COLOURED RACE IN THE STATES.

AT the annual meeting of the American Association of Obstetricians and Gynaecologists last year, Dr. K. I. Sanes, of Pittsburg, in a communication upon cancer,[3] turned attention to the statistics of that disease in the coloured race. He admits that the statistics collected by the Bureau of Census of the United

[1] BRITISH MEDICAL JOURNAL, October 1st, 1910, p. 945.

[2] *The Fourth Era in Surgery*. By Robert T. Morris. Philadelphia and London: W. B. Saunders Company. 1910. (Post 8vo, pp. 145. illustrated. 6s.)

[3] Statistics of Cancer in the Female, *American Journal of Obstetrics* November, 1910, p. 817.

States are meagre. No doubt, as in England, where also popular notions of the freedom of the subject and minding one's own business entail certain disadvantages, the task of collecting such statistics is not so easy as in more paternally ruled countries on the European Continent. Still, fairly reliable statistics have been collected from several cities in the Northern, Southern, and old Western States, and from the rural districts in the State of Maryland. These records are worthy of study, if only to show how fallacious conclusions drawn from statistics may be. The mortality per 100,000 of the coloured race is, according to the report in question, 50.2, whilst in the white race it is as high as 71.7. This lower death-rate of cancer in the coloured race can, in Dr. Sanes's opinion, be explained not so much by the greater resistance of the race to cancer as by the fact that their mortality in the precancerous age is much higher than in the white race. United States statistics, which Dr. Sanes introduces into his report, show that the highest mortality of the coloured population, except at infancy, is reached at the age between 25 and 30, that of the white race being attained between 65 and 70. In other words, the coloured race die proportionately in larger numbers at ages before those at which cancer chiefly occurs. This higher mortality of the coloured race at the earlier age is chiefly due to the prevalence of tuberculosis. In the cities and country included in the above statistics of cancer, 457.4 deaths from tubercle were registered among 100,000 individuals of the coloured race, but only 179 deaths in the same number of whites. Thus the death-rate of the coloured folk from tuberculosis is two and a half times as high as that of the white race. If, Dr. Sanes remarks in conclusion, we add to this higher mortality at the age before cancer becomes common the probability of more frequent mistakes in diagnosis among the coloured people, it seems justifiable to doubt whether the coloured race resist cancer better than the whites.

PAROTITIS IN THE PUERPERIUM.

WHEN the triumphs of Clay, Spencer Wells, Keith, and Lawson Tait were in full bloom, surgeons already discovered complications after ovariotomy involving the parotid gland. As the great majority of abdominal sections thirty years since were ovariotomies, certain assumptions were made which were very natural, yet involved hasty and fallacious generalizations. Schröder and Moericke assumed a sympathetic connexion between the ovaries and salivary glands. Bumm traced staphylococci from the mouth of the patient into the infected parotid. Pfannenstiel and Martin supported this discovery by clinical evidence. The mouth grew dry during the operation; the routine after-treatment in those days did not involve proper care of the mouth, and hence the possibility of infection of adjacent glands became easy to understand. Damage incurred in the administration of anaesthesia was suspected, and not without reason. In February, 1881, Mr. Stephen Paget read before the Medical Society of London an important communication, entitled, "Parotitis after Injury or Disease of the Abdomen or Pelvis," which, although written by an Englishman, is, we are glad to say, still read, and held to be a standard essay even by Britons. At the date when it was read, surgeons had discovered that parotitis followed other operations besides ovariotomy, and Mr. Paget even questioned whether the complication were necessarily due to inflammation extending from a parched and foul mouth up the parotid duct into the substance of the gland. He further believed that sepsis was decidedly absent in many cases. He believed, on the other hand, on the influence of the nervous system, instancing salivation, suppression of saliva or parotitis after gastritis, salivation associated with cancer of the rectum, and suppression of urine after abdominal sections. More recently all the theories above noted have been supported or disputed. Sympathy between the parotid gland and the female organs has been distinctly observed and recorded. Halban reports how a patient under his care consulted him on account of swelling of the parotid, which occurred regularly at the menstrual periods, ceased during pregnancy, and returned after childbirth with the catamenia. Hitherto parotitis has not been associated with the puerperium. Dr. Fischer of Vienna[1] reports an instance in which the patient—a unipara aged 21—was delivered spontaneously at term after eighteen hours' labour. Episiotomy was performed and three sutures applied. The patient was exceedingly restless, shrieking and kicking about; in consequence a very small dose of chloroform was administered. The mouth was washed out and the tongue drawn forward; the jaw was not forced open. The patient was not more than eight minutes under the influence of the anaesthetic, and was never deeply narcotized. On the second day symptoms of parotitis set in. Opening of the jaw gave severe pain. The sublingual and submaxillary glands were not involved, the fauces remained healthy, and the mouth did not become remarkably dry, nor was there constitutional disturbance or even headache. The parotitis was limited to the left side, and subsided totally within the first week of the puerperium. There was no epidemic in the neighbourhood. Dr. Fischer discussed the usual theories, which he could not find applicable in his case. He could not believe that it was due to the effects of the anaesthetic, for after countless administrations under his own observation parotitis was quite exceptional. He considered, however, that damage, unavoidable during the anaesthetization of a restless subject, might very probably account for the complication in his, as well as in many another case. His patient struggled, and opened and shut her mouth, which had to be well-cleaned out. The tongue was drawn forward, but no further special manœuvres were employed. The oral mucosa was probably scratched, and thus infection ensued. In operations entailing the maintenance of anaesthesia for an hour or more, with the use of the gag and repeated pulling on the tongue, Dr. Fischer could well understand how parotitis might be the direct result of traumatism, and not of poisoning by the anaesthetic, or of some reflex effect due to the abdominal operation or injury. In conclusion, whilst Mr. S. Paget and many eminent Continental authorities have marshalled so many cases of parotitis after abdominal injuries as well as operations, it is interesting to learn how rarely the complication occurs after the severe physiological traumatism of labour, a process where we know full well the aid of the anaesthetist is so often demanded.

THE COTTAGE BENEFIT NURSING ASSOCIATION.

THE Cottage Benefit Nursing Association is a society for the training and organization of the supply of nurses for the sick poor in the rural districts of England. Its annual report for the year 1909–10 is a record of another year of useful work, accompanied by the complaint of lack of funds, which is common to all such organizations doing what should be the work of the State voluntarily, and depending on charitable subscriptions. To medical men the most interesting item in the report will be the account of the half-

[1] Parotitis und Wochenbett. *Zentralbl. f. Gynäk.*, No. 49, p. 1592.

yearly meeting which was addressed by the Hon. Sydney Holland and Dr. Hick. Mr. Holland again expressed his conviction that the State registration of nurses would cause deterioration in the standard of nursing. The only test for registration, he said, would be the passing of an examination, and most people will admit that the most important things in the make-up of a nurse are of a kind that cannot be tested by examination; but the admission does not carry us very far if we are seeking a remedy for defects and abuses which all must admit do exist. Mr. Holland further argued that, having passed her examination and achieved registration, the nurse's knowledge would become out of date, and her character might deteriorate, while she could only be removed from the register after the commission of some serious offence. Medical men will reflect that similar arguments might be applied to medical registration, and yet we flatter ourselves that the latter has not been responsible for any deterioration in the standard of the practice of medicine and surgery. Dr. Hick emphasized the importance of the provident system in connexion with the provision of nursing. He compared his recollection of the Yorkshire Penny Bank and its development with the pauperizing tendency of charity in the South of England. The latter, he declared, seemed specially designed to produce H. G. Wells's "Ideal lower-class person—dishonest, faithful, abject, industrious, and inconceivably incapable of responsibility." In a very outspoken passage Dr. Hick remarked, "The cry for midwives in the country districts is altogether an artificial one. This is proved in my own district—five miles by fifteen—where every woman is attended without difficulty by a medical man." We should not be surprised if there were practitioners in other than country districts who would endorse that remark.

DR. THOMAS MOUNDEFORDE'S FEE FOR PROFESSIONAL ATTENDANCE (1611).

IT is almost exactly three hundred years since Dr. Thomas Moundeforde gave his professional services to Lady Arabella Stuart during the eventful months which followed her private marriage to Lord William Seymour. A writer in *Notes and Queries*[1] has unearthed the following interesting facts regarding the fee paid to the medical man; they are contained in

The Declaration of the Accompte of Nicholas Pay, gentleman, appoynted by warraunte of the righte honorable the lordes of the Kinges ma^ts^. Privie Councell to receave and issue soudrye somes of money for the provycon of dyett and other chardges of the ladye Arabella Seymour, whoe by his hignes comaundemente and pleasure shoulde haue bene remoued into the countye Palatyne of Duresme [Durham], under the chardge of the Reverend Father in God Will'm lorde Bishpp of Duresme; but after was stayed and appointed to remayne at Eastbarnett during his hignes good pleasure.

Among the items in this "Accompte" is the following:

Money payde to Thomas Moundeforde, Doctor of physicke, and an apothecarye appointed by order of the lordes of the Privie Councell to geve their attendance uppon the saide lady Arabella, viz.:

For the enterteynement of the saide Doctor Moundeforde for cl^tie^ dayes begonne the viij^th^ of Ffebruarie 1610 [1611] and ended the vij^th^ of Julie following 1611 at xxx^s^. per diem	ccxxv^li^.
Ffor the enterteynement of his Apothecarye for ninety dayes at xiij^s^. iiij^d^ per diem ...	lx^li^.
Ffor twoe cabanetts furnished w^th^ thinges necessary and used in the tyme of the saide ladye Arabella for sycknes	xii^li^.
Ffor chardges of horsehier and other expences of the saide Doctor Moundeforde	iij^li^.

From the "Accompte" it is evident, therefore, that Dr. Moundeforde was in attendance upon Lady Arabella (here correctly designated Seymour, for she had been married to William Seymour in May, 1610) for 150 days at 30s. a day, or £225 in all, that the apothecary got 13s. 4d. a day for 90 days, that the doctor got £3 more for horse hire, etc., and that an allowance of £12 was made for two medicine cupboards. For Lady Arabella's medical necessities at East Barnet the total sum was, therefore, £300 exactly. Money, of course, had a much greater purchasing power then than now. The circumstances surrounding this early seventeenth century fee were romantic, and, in the end, tragic. When James VI of Scotland became heir to the Crown of England there were other persons who stood in the line of succession to the throne. Arabella Stuart was his cousin, being daughter of Charles Stuart, Earl of Lennox, younger brother of Lord Darnley, and therefore great granddaughter of Margaret, the eldest sister of Henry VIII. She was near enough, then, to be a dangerous claimant; but after the peaceful accession of James she received a pension and a place near the Queen, and was evidently looked upon with favour. Unfortunately, however, she fell in love with young William Seymour, great grandson of Mary, the younger sister of Henry VIII and Duchess of Suffolk. But this attachment could not be encouraged, for here would have been a blending of "the rights in the order of succession with the rights of the house of Suffolk," each of them by itself dangerously strong. The lovers therefore had to promise James and his Council that they would not marry, and for a time all went well; but love will not always yield to reasons of State, and they married in May, 1610, Lady Arabella being then 35 years of age. The marriage was soon discovered, and whilst Seymour was thrown into the Tower, his wife was sent off to be under the watchful care of the Bishop of Durham. But no sooner had the lady started than she was taken ill, so her journey was broken—first at Barnet (where she stayed for eleven days, namely, March 21st to April 1st), and then again at East Barnet (where she remained for sixty eight days, namely, April 1st to June 7th). It was about this time that she made her somewhat romantic escape, dressed in man's clothes, and drew from the ostler at the inn the remark that "the gentleman would never hold out to London"—no matter for wonder, perhaps, if her illness of all these weeks had been real and not assumed. She narrowly missed a successful meeting with Seymour, was recaptured and thrown into the Tower, where she lived for some four years, but bereft of reason. If we compare the dates of the story with those of the "Accompte," it becomes plain that Dr. Moundeforde was in attendance upon Lady Arabella before she left London for Barnet, and again for some days after her recapture; the apothecary was only in association for a shorter period (ninety days). The Dr. Thomas Moundeforde, who was able to give up his other professional duties to act as a sort of travelling physician to this ill-fated lady, was a Norfolk man, who was educated at Eton and King's College, Cambridge, taking his B.A. in 1572 and his M.A. in 1576. "On July 18th, 1580, he diverted to the study of medicine."[2] Since he was born in 1550, he must have been 61 years of age when he came into relation with Lady Arabella Seymour. He lived in Milk Street, London, and had a long connexion with the Royal College of Physicians, being seven times Censor, Treasurer in 1608, and President in 1612, 1613, 1614, 1619, 1621, 1622, and 1623. It will be noted that he held no high place in the college in 1611, the year out of which he gave so much of his time to Lady Arabella and East Barnet. He was also the author of a book, *Vir Bonus*, dedicated to the King and to others (including four judges). The book is divided into four parts—

[1] *Notes and Queries*, vol. 1, pp. 10, 274, 1849-50.

[2] *Dictionary of National Biography*, vol. xxxix, p. 204.

"Temperantia," "Prudentia," "Justicia," and "Fortitudo"—and is a "summary of what experience had taught him of the conduct of life," including possibly that of this wilful and wayward and lovesick newly-wed wife of middle age and dangerous nearness to King James's throne. He became blind and died in 1630 in the house of his son-in-law, Sir John Bramston.

THE "INDEX CATALOGUE."

THE annual volume of the *Index Catalogue*, or, to give it its full name, the *Index Catalogue of the Library of the Surgeon-General's Office, United States Army*,[1] contains in its 777 folio pages with double columns of small print the rubrics running from S to Skin-grafting. Now, when one reflects that this is but one volume of the second series, and that the S volume of the first series was issued in 1891, one is able to form some conception of the enormous output of medical books and articles which has been taking place in recent years, for whilst some of the rubrics in the volumes of the second series refer to books, pamphlets, and articles published prior to 1891, the great bulk of them belongs to the last twenty years. A second volume the size of this one will doubtless be required to complete the letter S. The following statement from Lieutenant-Colonel McCaw's introductory letter (which takes the place of preface) speaks eloquently for itself: "This volume includes 8,804 author titles, representing 4,688 volumes and 7,460 pamphlets; it also contains 3,616 subject titles of separate books and pamphlets, and 28,328 titles of articles in periodicals; the library now contains 172,270 bound volumes and 304,708 pamphlets." Well may our American brethren be proud of their medical library in Washington, and happy is the scientific or literary man who lives within consultation reach of the well-filled shelves of that great collection of books. But even to doctors on this side of the Atlantic the *Index Catalogue* is indispensable if they would be acquainted with all that is being written on any medical subject, and fortunately it can be consulted in our medical libraries. Of course it is only the latest volume to appear which can be quite up to date, but the gaps which exist can be filled up by a reference to the catalogue's satellite or little brother, the *Index Medicus*, which is published monthly. If there are medical men who are sceptical about the value of such a work (apart from the one virtue of giving to any one who wishes it the means of finding all that has been written on any disease, form of treatment, or theory of origin of any malady), let them simply read over the titles of, say, the articles under the rubric, "Septicaemia (Treatment of)." They will, perhaps, find some titles which are far from illuminating, and which give little or no information about the articles which they head; but that is the fault of the writers of these articles, and not of the librarian who catalogues them. And it may be remarked incidentally that if medical authors only realized how little chance there was of their papers being read in full they would be more careful to put their chief conclusion in the title. What chance of being referred to has such a title as "A Remarkable Occurrence in Medical Practice"? The Washington librarian will have to skim it over in order to find what subject-heading to put it under; but what other living creature will care to look at it? Yet there are titles almost as silly as that to be met with any day. But, to return to the articles catalogued under "Septicaemia," most of the titles give definite pieces of information; they let us see, at any rate, what medicines or other therapeutic measures have been in vogue; they may suggest to us to try some of them; or they may prevent us from thinking that we have been original in discovering one or other of them. If we will cast our eye down the columns concerned, we shall see a great many papers upon the "serum treatment," about as many on treatment with "silver compounds" (collargol, argentum colloidale), not so many on the "formalin treatment," and stray ones on such methods as the use of "intense heat," "acetozone," "perchloride of iron," "iodoform wax," "passive hyperaemia," "oxygen," "oxygenated water subcutaneously," "venesection and intravenous transfusion of saline solution," and "nitrate of silver" (intravenous injection). Or, if we turn over a page or two, we shall come upon the heading, "Sero-diagnosis," with its several subdivisions of *sero-diagnosis by agglutination, by bacteriolysis and haemolysis, by fixation of the complement, by precipitins*, and *by specific conjunctival or cutaneous reactions;* and we realize from the hundreds of articles indexed under these names how large is the territory occupied by some of the newer methods of scientific diagnosis in medicine. And these do not exhaust the articles on the subject, for under the terms "serotherapy" and "serum-anaphylaxis" (that curious inverted immunity, or opposite of prophylaxis), and "serum-haemolysis," etc., are some twenty more columns of close-printed references to recent contributions on these matters. There is scarcely a subject catalogued which will not afford some information, often of an interesting kind, when investigated; as the eye travels rapidly down a column of titles the mind is supplied with a long series of suggestions some of which may be turned to practical account. Here and there, also, one comes upon surprising rubrics. There is, for instance, "Shakespeare, William," with the names of eight books on the medical aspects of the poet and his plays and with the titles of nearly thirty articles in periodicals on the same subjects; among these we come upon an article with the amazing title "Shakespeares Gynäkologie"! In the next column, under "shampooing," are references to two articles on the dangers of the dry shampoo (use of carbon tetrachloride). Under "shock" are hundreds of articles throwing light by their titles upon the modern views of the pathogenesis of that trying complication and upon its treatment by saline injections. There are subjects, however, which show by the paucity of references to them that they are passing into the limbo of lost things; of these is "sarsaparilla," which can claim only one separate work since 1891, and that a short graduation thesis of Dorpat (1892), while there are less than a dozen papers on it, one of which bears the title *Les sarsepareilles d'aujourd'hui*, with its suggestion that "there was a time once, but"——

[1] *Index Catalogue of the Library of the Surgeon-General's Office, United States Army.* Second series. Vol. xv. S—Skin-Grafting. Washington: Government Printing Office. 1910.

WE must again apologize for the delay in dealing with many communications received recently; but the difficulty caused by the printers' strike has been adjusted, and it is hoped that no delay will occur in the future.

THE French Government has sanctioned the expenditure of a sum not exceeding £13,600 for the purposes of the International Hygiene Exhibition to be held this year at Dresden.

ON the occasion of the German Emperor's birthday the dignity of a Member of the Prussian House of Lords was conferred on Geheimrat Wilhelm Waldeyer, Professor of Anatomy in the University of Berlin.

England and Wales.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

BRISTOL.

UNIVERSITY COLSTON SOCIETY.

THE twelfth annual dinner of the members of the University Colston Society took place on January 16th in the large hall of the university, Mr. J. H. Howell presiding. The guests of the evening were Sir Alfred Hopkinson, K.C., LL.D., Vice-Chancellor of the Manchester University, and Sir Thomas H. Elliott, K.C.B., of the Board of Agriculture and Fisheries.

After the toast of "The King" had been drunk, the President, in proposing "The Pious Memory of Edward Colston," referred to the many benefactions of the great Bristol philanthropist, who lived 200 years ago, specially mentioning the educational side of his benevolence. Hitherto the collection made among the members of the society had been for the sustenance, but this year a new departure was to be made, and whatever was received would be devoted to the endowment of a chair for research. The secretary announced that the collection amounted to £628, being the third highest in the history of the society.

The toast of "The Guests" was given by the Bishop of Bristol, and Sir Thomas Elliott, in reply, said that he had been advised by the Vice-Chancellor to exhort the members of the society to continue their good efforts, but he could claim no power of exhortation; in fact, he had learnt that it was never wise to teach a farmer how to carry on his own business. He had great belief in the value of scientific research, and there was no more profitable field for it than in agriculture, which was the meeting ground of all the sciences. Research benefited consumers and producers, and there was an increasing recognition all over the world of the value of agriculture to the life of a nation, and he hoped that the whole responsibility for its furtherance would not be relegated to the State. Sir Alfred Hopkinson also spoke in reply, and referred to the helping hand the University of Oxford had extended to Bristol University. He urged the importance of encouraging an active and vigorous life in the universities and of rendering useful service to the community. A university in a city should influence its whole life, and the citizens should feel proud of it. They should not be content to be merely called "provincial universities," for they should draw from a wide area and emphasize the value of teaching in special subjects. Associated work was of great importance, and research stimulated the young workers and the wise guide. A university must adapt itself to the community around it and the conditions of modern life, but they must not forget the traditions of the past, so literature and history must ever flourish in their midst. Independence, too, was another keynote, for while the State might give valuable assistance he trusted no university would be attached to any department. While it was not well to talk too much of ideals, it was always advisable to have some which they wished to attain. The wide field of research was never narrowing, but always expanding.

The toast of the "City of Bristol" was proposed by Dr. R. Shingleton Smith, and replied to by the Lord Mayor and Sheriffs; that of the "University of Bristol" was given by Sir William Howell Davies, M.P., and in replying, the Vice Chancellor, Sir Isambard Owen, M.D., said he felt like a patient present at a consultation on himself when listening to the advice given to the members of the university. He approved of the prescription, and promised to do his best to assimilate and profit by the generous diet laid before him. In conclusion the Vice-Chancellor was placed in the chair as the new president.

RED CROSS SOCIETY.

A reception was given by Sir George and Lady White in the Victoria Room on January 19th, when the former announced that in the event of an invasion of this country the Royal Infirmary would be used as a base hospital. At present the society is represented by a voluntary aid detachment of the St. John Ambulance Brigade and two female nurse sections.

MANCHESTER AND DISTRICT.

AN OPERATION UNDER DIFFICULTIES.

AN inquest was held last week at Warrington on a man who, on stepping out of a railway carriage, accidentally got under the train at Earlstown Junction. The evidence as to how the accident happened was somewhat conflicting, one statement being that the train stopped and then suddenly started again as the man was getting out, though a railway employee said that the man was attempting to leave the train before it stopped. In any case, the man was so pinned down under the carriage that it was found impossible to release him without amputating his leg. The operation was performed under the greatest difficulties by Dr. Lawrance of Earlstown, and the man was then removed to the Warrington Infirmary. Unfortunately, another operation was afterwards necessary in the infirmary, and the patient was unable to bear the shock. The jury found that he died from the injuries he had sustained, but there was not sufficient evidence to show whether the injuries were inflicted through his own fault or from the negligence of the servants of the railway company. The coroner and jury and the official representative of the railway company paid a high tribute to the skill of Dr. Lawrance, who performed the operation at the station under the greatest difficulties, and they expressed admiration for the fortitude with which the patient went through the ordeal.

MEMORIAL TO THE LATE DR. J. M. RHODES.

A memorial which takes the form of a handsome clock tower has just been erected at Didsbury in memory of the late Dr. J. M. Rhodes, who did so much valuable public work, in connexion especially with Poor Law administration. The tower is of light coloured stone, about 25 feet high, with drinking-fountains at the base, and it bears a copper medallion of Dr. Rhodes with an inscription. The cost has been about £350, nearly all of which has been raised in small subscriptions.

ASYLUM ACCOMMODATION IN LANCASHIRE.

For the last ten years the necessity for increased asylum accommodation has been acutely felt in Lancashire, and some years ago it was decided to build a new asylum at Whalley. Some objections were raised to the site, and the Lunacy Commissioners for long hesitated to pass the plans, so that the tenders were only accepted a few months ago. Another three years will probably elapse before the new asylum can be completed, and to meet the requirements in the interval the Asylums Board decided to enlarge Whittingham Asylum to take 700 more patients, and also to provide accommodation for 330 at Seafield House, Liverpool. It was expected that the latter scheme would be the most expeditious, but the Commissioners decided that the place could only be leased for temporary accommodation of pauper lunatics for whom provision could not be made at Rainhill. Seafield House was taken last March on a lease at £600 a year, the lease giving the owners, who are the Mersey Docks and Harbour Board, the option of ending the lease at the end of seven years, though the Asylums Board have only the option of doing so at the end of fourteen years. It has recently been found that the cost would be so great that it will be better to abandon the scheme altogether, and the subcommittee dealing with the matter suggests in its place the erection of temporary buildings adjacent to one of the existing asylums. Objection to the position of Seafield House has also been taken on the ground that the situation is bad owing to the noises from foghorns and sirens from the river Mersey. Moreover, though the original estimate for altering the house was £13,500, it is now found that the lowest tender for the work is £16,200, and by the time that the work could be completed there would only remain

about four and a half years, at the end of which the Docks and Harbour Board might, if it so wished, terminate the lease. During that time the committee estimates the expenditure would have been over £35,000, while the estimated cost of a permanent building to accommodate the same number, that is 330, is only £39,600. In view of all these facts the committee has decided to recommend that the scheme be abandoned. The question came up before the Lancashire Asylums Board last week, and deputations were received from the West Derby and the Prestwich Unions. In both these unions the greatest difficulty is being now experienced in finding room for the patients. In the West Derby Union it was stated there was no possible means of treating the sick in case of any serious visitation of illness, and 61 patients, many of them acute cases, had had to be accommodated in the ordinary sleeping wards, while 9 had had to be sent to asylums outside the county. The position was said to be equally bad at Prestwich, as patients had been sent as far away as Middlesbrough and Birmingham, and if the Seafield House scheme were abandoned the situation would be most critical. An amendment was moved and seconded that the committee be instructed to carry out the scheme at once, the clerk having stated that the amount sacrificed if the scheme were abandoned would be fully £10,000. On a vote being taken, however, the amendment only received four votes, and the original motion not to proceed with the scheme was then carried.

WEST YORKSHIRE.

Unwholesome Food in Bradford.

The people affected through the supply of impure food belong to the poorer class of the community; and these are the very persons who are least able to protect themselves. Several prosecutions have recently been instituted by the Bradford Health Authority in cases of this kind. One defendant had 25 quarts of cockles for sale which were stated to be absolutely rotten and with a vile odour. He was find £5 and costs. Another defendant had some turkeys for sale in an advanced stage of decomposition. They had been kept in a refrigerator from Christmas, 1909, until the same period of the following year. A fine of £2 was imposed A third case was open to considerable difference of opinion. "High" venison was seized, but the magistrates considered that venison that was high was not necessarily unfit for human consumption. The summons was dismissed.

The Bradford Anthrax Investigation Board.

It is extremely unfortunate that a controversy, that may endanger its usefulness, has arisen in connexion with the work of this board. Mr. F. W. Jowett, M.P. (Labour member for one of the divisions of Bradford) recently made a speech in which he stated that the board was paying too much attention to bacteriological research and too little to the practical question of the importation of the dangerous material. The matter was further considered at a meeting of the Trades Council, and after speeches from Mr. Jowett and others that body determined to withdraw its representative from the board.

Mr. Jowett maintained that the late Dr. J. H Bell, of Bradford, considered that the germs of anthrax could be destroyed by steam under pressure (230° F.) applied to the bales of wool at the port of entry. Dr. Bell's suggestion would probably have to be revised to the extent that possibly the spores would not be destroyed by these means. But he maintained that there were germicidal agents that could be used for this purpose without injury to the wools. The danger stated to occur from handling the fleeces containing dried blood was not the only one. Dust must contain some of the broken-down blood clots, and in this way was very dangerous. The implication from the board's conclusions was that the latter was not of much moment. The board, owing evidently to the question of cost, would not make any suggestions that the bales of wool should be opened so as to disinfect them thoroughly. The reply of the chairman of the board to these strictures is to the effect that "while they (the board) have already obtained most valuable information, in the present state of their researches it would not be wise to ask the Home Office to act until they are quite sure as to the procedure to adopt. When this moment arrives the board will not fail to takes all necessary steps in whatever direction may be found desirable."

Dr. Eurich's work has been so admirable and the steps adopted by the board so reasonable that it is much to be regretted that the Trades Council has come to the decision recorded. To the scientific observer the action seems precipitate, and it is to be hoped that even yet wiser counsels may prevail. Surely criticism of the board's action might be offered without going to the extreme step of severing all connexion with it!

LONDON.

Medical Treatment of School Children.

Criticism of the present scheme of medical treatment of school children in London was renewed when the County Council resumed its sittings last week. At the meeting of the Council on January 24th the approval by the Board of Education, as an experiment, of two schemes for providing dental treatment at Poplar and Deptford, was reported. In the course of a general discussion the point was made that for providing efficient dental treatment school clinics were probably the best means, and that the present method of utilizing the hospitals—even if it could be shown to be sufficient for the treatment of ailments of the eyes, nose, throat, and skin—would be inadequate when dental treatment was in question on account of the large percentage of children found on inspection to be suffering from dental caries. No resolution, however, was carried. On January 25th, at the meeting of the Education Committee, Mr. R. A. Bray moved the following resolution:

> That, inasmuch as the present method of assessing parents' payments in respect of medical treatment is causing (1) parents to be deprived of the free medical treatment for their children which they have received from the hospitals hitherto, (2) the overcrowding of those hospitals with which the Council has no agreement and which consequently provide free treatment as before, arrangements be made whereby parents are required to contribute only in those cases when the hospitals decide that their circumstances are such that free medical treatment should be refused.

Mr. Bray urged that the present arrangements inflicted hardship on parents who now had to pay for treatment for their children where formerly they received it free. The working classes were beginning to resent this very much; a vast number contributed regularly to the hospital funds, but if the present state of affairs continued, that would cease. Another difficulty was that hospitals at which treatment was still free, because no agreement had been made with the Council, were getting overcrowded with patients. It was stated that the Children's Care Committee had under consideration the whole question of the recovery of the cost of medical treatment, and the motion was referred to the Committee.

Statistics of London Inquests.

Mr. Casson has given notice to move at the London County Council:

> That it be referred to the Public Control Committee to ascertain, as regards the past five years, and to report (1) the number of inquests held in London by coroners and their deputies respectively; (2) the sums paid to each coroner in respect of such inquests, and the proportion of such sums paid in respect of inquests held by deputy; (3) the remuneration paid by each coroner to his deputy; (4) such other expenses as may have been incurred by each coroner in respect of inquests held by deputy; and (5) generally as to the terms of employment of deputy coroners.

District Medical Officers' Fees.

The County Council on January 31st decided to fix a fee of 10s. 6d. for the services of district medical officers when called to houses at which nurse infants are kept to certify as to conditions prejudicial to the

health of such infants. It was stated that these services involved consultations with the Council's inspectors and specially arranged visits to the houses.

NEWCASTLE-UPON-TYNE.

THE CLINICAL SOCIETY.

THE Clinical Society, founded in 1883, still possesses all the vigour of youth, and has begun to publish on its own account the *North of England Clinical Journal*. The first number appeared a week ago under the able editorship of Dr. George Foggin. If succeeding issues maintain the high tone of the inaugural number success is assured.

The current session of the society has been fruitful of good work. In addition to the contributions by various members of the society, Dr. G. L. Gulland, of Edinburgh, a fortnight ago enriched the proceedings by an admirable address on the value of an examination of the blood in disease, with practical demonstrations. On January 25th the annual address to the society was given by Dr. Risien Russell in the College of Medicine, the subject being "Important Problems in the Diagnosis of Diseases of the Nervous System." The address, which was illustrated by lantern slides, was of the high character expected from one who is such a careful observer, and was listened to with close attention. His remarks upon the means of differentiating between organic and functional affections were much appreciated. In the evening Dr. Risien Russell and Dr. Byrom Bramwell were entertained to dinner in Tilley's New Rooms, where 112 members and friends sat down. The chair was occupied by the president, Dr. E. Napier Burnett, who, after having submitted the Royal toast, gave that of "Our Guest," Dr. Risien Russell. Dr. Russell made a happy speech in reply. Dr. Byrom Bramwell proposed "The Clinical Society," which was acknowledged by the treasurer, Dr. D. Wells Patterson. To Sir Thomas Oliver was entrusted the toast of "The Visitors," coupled with the name of, and acknowledged by, Principal Hadow, of the Armstrong College. The harmony of the evening was much enhanced by excellent singing and music.

MR. FRANK HOWSON AND SYDNEY UNIVERSITY.

Mr. Frank Howson, Lecturer on Physiology, having been appointed to a similar post in the University of Sydney, the opportunity was taken of indicating to that gentleman, before he left the North a week ago, the esteem in which he was held by his colleagues of the College of Medicine and of Armstrong College. At a meeting in the College of Medicine Professor Philipson, in the name of the subscribers, presented to Mr. Howson a handsome cheque. A few days previously Mr. Howson received from the Teachers' Association, as a mark of appreciation, a gold fountain pen.

ANNUAL DINNER OF PAST AND PRESENT STUDENTS.

The annual dinner of the past and present students of the University of Durham College of Medicine is to be held in Newcastle on February 15th, when, in the afternoon, an address will be given by Mr. Arbuthnot Lane, F.R.C.S., on the operative treatment of fractures. Professor Rutherford Morison will preside at the afternoon meeting, and Mr. H. Brunton Angus will occupy the chair at the dinner.

Scotland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

THE MEDICAL PROFESSION AND THE TERRITORIAL FORCE.

A CORRESPONDENCE that has recently taken place between a surgeon-lieutenant-colonel and the Territorial Association to which he is attached, with the War Office intervening, raises once more the question of the fee paid for the medical examination of recruits to the Territorial Force. This surgeon-lieutenant-colonel has to travel very considerable distances, at his own expense, to make examinations of recruits, and he rightly protests against the War Office regulation which allows the fee of 1s. for each recruit found fit for service in the Territorial Force and nothing for the examination of those found unfit, although the examination of the latter will almost of necessity be a more prolonged one. In his opinion, these regulations and this scale of pay reduces medical examination to ridicule and puts a premium on passing the unfit. But, as far as we are aware, the new point brought out in this correspondence is the more plain statement by the War Office that medical officers might give their services without payment. The Territorial Association agreed with the doctor, and appealed to the War Office, which, on January 6th, 1911, replied as follows:

> In reply to your letter of December 20th, 1910, regarding the payment of fees for the medical examination of applicants for enlistment in the Territorial Force, I am commanded by the Army Council to state that the grant allowed by paragraph 747, Territorial Force Regulations, must be considered as in the nature of a contribution to the general funds of the Associations, and not as the fee allowed to medical practitioners for the conduct of these examinations. It has been found that medical officers of units have frequently (following the practice in the Volunteers) carried out these services without payment, but where expenditure is found to be actually necessary, whether for men accepted or rejected, on this account the sums so expended should be charged to the general funds of Associations. The Association accounts show that, on the average, the grant more than balances the expenditure.
>
> (Signed) H. H. BRADE.

Some at least of the County Associations would be unable to agree with the last sentence of this letter, and most would agree that apparently the medical profession is the only body of men to be asked to give gratuitous service to the War Office. That is the point which our correspondent presses.

SCOTTISH POOR LAW MEDICAL OFFICERS' ASSOCIATION.

The annual meeting of the Scottish Poor Law Medical Officers' Association was held in the St. Enoch Hotel, Glasgow, on January 27th. The annual report for the year 1910 stated that during the year a large amount of correspondence was entailed in supplying applicants with detailed information as to vacant Poor Law medical appointments. The association expressed its thanks to the outgoing medical officers who supplied the necessary details. The report gave a few typical cases of inquiries received and the gist of the replies returned. The Secretary for Scotland had indicated to Mr. J. Cathcart Wason, M.P., that there was no chance of the Parochial Medical Officers (Scotland) Bill being considered by Parliament, in view of the Royal Commission on the Poor Laws, until the Government attempted legislation on the lines of the report; when that occurred, an effort would be made to remedy the grievances of Poor Law medical officers in Scotland. The financial statement showed a substantial balance. The report was discussed clause by clause and unanimously adopted The office-bearers were re-elected, including Dr. W. L. Muir, 1, Seton Terrace, Dennistoun, Glasgow, the Honorary Secretary. Votes of condolence to the relatives of deceased members brought the meeting to a close.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

WOMEN'S NATIONAL HEALTH ASSOCIATION.

THE success attending the many enterprises that have been inaugurated by the various branches of the Women's National Health Association throughout Ireland, and more especially the valuable work performed in the poorer districts of both town and country by the nurses that the association supports, has frequently been mentioned. A recent report of the Wexford Branch of the association, however, suggests the advisability of the association insisting that their nurses should always work under the

advice of the doctors in whatever district they may be stationed, and that the nurses should carefully avoid arrogating to themselves a position to which their knowledge does not entitle them. In the report to which we refer the nurse takes credit to herself at the expense of some unnamed doctor for effecting a cure in a case of gangrene which the doctor had stated to be hopeless. She also stated that she had done her best in cases of blood poisoning, and that she had been called in in a number of cases where children had pneumonia or convulsions. As she added that the cases of blood poisoning generally turned out well and that the cases of pneumonia came under her care, it is to be presumed that she not only was called in to see such patients in the first instance, but that she continued in attendance upon them without seeking the aid of a medical man. If this is actually the case, we fear that friction is bound to arise between medical men and the association, and, in consequence, in the interests of the poor who might suffer much thereby, we call attention to the matter. When the association was started the opinion was expressed in many quarters that ill-feeling would be bound to arise between its members and the medical profession owing to a supposed tendency on the part of the association officials to override and ignore medical opinion. These fears, we think, have not been realized, and on the whole the association appears to have done and to be doing its work tactfully and well. We further believe that the circumstances which have evoked these remarks are entirely exceptional.

MEDICAL FEES.

A case of much importance to the medical profession was heard before the Recorder of Dublin last week. The facts are as follows: Two ladies were injured in a motor-car accident, and took an action for damages against the owner of the car. Prior to the hearing of the case the ladies' solicitor communicated with Sir Christopher Nixon, M.D., and asked him what his fee would be for examining one of the two ladies and for attending in court and giving evidence. Sir Christopher Nixon named a fee of five guineas for the examination and twenty-five guineas for attending the court. This was agreed to, and the medical examination was carried out. Later Sir Christopher Nixon was notified that the case was coming on at a certain date, and was asked to attend in court at 11.30 a.m. on that day. Sir Christopher made the necessary arrangements to attend, and did actually attend, but on arrival at court at 11.25 a.m. found the parties coming away, the case having been settled. Subsequently, on applying for his fee, the same was refused on the grounds that no actual evidence was given. The Recorder took the view that an expert witness was not paid for his evidence but for attending to be called as a witness, and that when a doctor made arrangements to give up his clients for the day in order to attend court he should be paid the fee he had contracted for, whether the evidence was given or not. In consequence a decree for the full amount claimed was given. It is possible that more will be heard of this case, as the solicitor for the defendant contended that once a doctor has examined any person, and that the condition of the person examined became a question in court, the doctor could be compelled to attend in court for the fee laid down in the parliamentary schedule, and that no action could be taken to recover fees as a medical witness further than scheduled fees.

MEMORIAL TO THE LATE DR. W. B. MCQUITTY.

A meeting of many of the patients and friends of the late Dr. W. B. McQuitty was held in the City Hall, Belfast, on January 27th, for the purpose of considering the best means of perpetuating his memory. Mr. R. J. M'Mordie, M.P., Lord Mayor, occupied the chair, and there was a large attendance. Sir John Byers moved:

> That, in the opinion of this meeting, it is desirable there should be a memorial to the late Dr. McQuitty.

After referring to the many services of Dr. McQuitty he said that opinion varied as to whether the memorial should take the form of endowing a bed in the Royal Victoria Hospital, or of founding a prize in connexion with the clinical teaching. The motion was seconded by Mr. James Davidson, chairman of the board of the Royal Victoria Hospital, supported by Sir Peter O'Connell, D.L., President of the Ulster Medical Society, and carried. On the motion of Mr. J. J. Adams, Antrim, a large committee was appointed to carry out the object of the meeting. Drs. John Campbell, William Killen and Charles J. Milligan were appointed honorary secretaries.

India.

[FROM OUR SPECIAL CORRESPONDENT.]

THE HEALTH OF CALCUTTA.

THE elaborate report for the year 1909 prepared by the Health Officer, Dr. T. Frederick Pearse, F.R.C.S., D.P.H., presents a satisfactory and hopeful view of the sanitary condition and administration of the city of Calcutta. The year was a wet one, and excess of humidity is found to be unfavourable to health. Increased care is being exercised in collecting and checking vital statistics. The birth-rate was 22.9 per 1,000, or, making allowance for an increase of the population and peculiarities of its composition, 27.4. The death-rate was 34.1, against a quinquennial rate of 35 2, or, making similar allowances, 34.9. Females died at the rate of 44 and males of 29 per 1,000. The death-rate of infants under 1 year of age was 268 per 1,000 of births—the lowest rate recorded for eighteen years.

The principal causes of mortality were: Small-pox, 13 per cent. of total deaths; bronchitis, 12; plague, 8; cholera, 7; phthisis, 6; malaria, 5; dysentery, 5; tetanus, 4; remittent fever, 3; acute pneumonia, 3; puerperal diseases, 2; and epidemic dropsy, 2; totalling about 70 per cent. of the whole mortality. The town was visited by a sharp epidemic of small-pox, which is apt to recur every few years. Segregation, disinfection, and vaccination were actively resorted to. The outbreak was the worst for forty years. Improved ambulance arrangements have been made for the conveyance of infectious cases. The epidemic subsided in June. The great mortality (5.8 per 1,000) caused by chest diseases is a serious fact. The very young and old are the principal victims, and the suburban areas suffer more than the urban. Phthisis levies a lamentable tribute (2.3 per 1,000). The mortality among females—especially Mohammedans—is higher than among males. The health officer supplies useful hints as to preventive precautions. The cholera death-rate was below the average of past years, and statistics indicate that malarial fevers and bowel complaints are on the decline. A "mosquito brigade" was employed in the most malarious wards during the fever season; but the benefit of the measure was doubtful. There was an increase of plague mortality (2,117 deaths, against 1,779 in 1908). The outbreak was sharp and short. Only 363 inoculations were performed, and no death occurred among the inoculated. Rat destruction and disinfection were resorted to on a large scale. Puerperal mortality and infantile trismus, both indicative of bad midwifery, continue to cause many deaths. Two municipal midwives were employed during the year, but their practice appears to have been restricted. A female sanitary inspector was also appointed temporarily. The measure seems to have met with considerable success; access is obtained in this manner to zenanas and their occupants. The most interesting part of the report is the description of a very remarkable outbreak of "epidemic dropsy" which took place during the year. The outbreak was evidently similar to that which occurred in Calcutta and Mauritius in 1879–81, and, on a smaller scale, in the former place in 1907. The disease broke out in the Alipore Reformatory in July, 1907, and prevailed to some extent in the town in that and the following year, causing 15 and 33 deaths. It started in force in July, 1909, and caused 433 deaths before the close of the year.

It visited most parts of the city, and as the case-mortality was small (about 2 3 per cent.) the seizures must have numbered over 15,000. Dr. Pearse pronounces the disease to be "acute, specific, and infectious," and inclines to the view that it is identical with beri-beri. The epidemiological features and mortality are very different from those of beri-beri. The clinical and pathological data are too imperfect and vague to justify any opinion *pro* or *con*. Captain Greig, I.M.S., has been deputed to investigate the disease, which, however, seems to have subsided. The details concerning sanitary work, which are given at great length in this report, indicate zeal and progress.

Federated Malay States.

[*FROM OUR SPECIAL CORRESPONDENT.*]

A VERY interesting report has been issued on the work done at the Institute for Medical Research of the Federated Malay States during 1909.

BERI-BERI.

Dr. Fraser, the director, has been conducting investigations on the etiology of beri-beri, and his researches seem to have met with some degree of success. The principal fact brought out is that certain varieties of rice are associated with the occurrence of this disease, and other varieties are not. Four years ago, when these investigations began, the position as regards the elucidation of the cause of this disease could be summed up thus: of the numerous organisms for which specific claims had been advanced, none of them had had its claims substantiated by independent and competent observers. Now it can be confidently stated, as the result of observations on dieting, that in people who consumed parboiled rice beri-beri did not occur, and that in those people who consumed white rice beri-beri did occur.

These facts were brought out by the use of parboiled rice being supplied to 300 labourers in the work of road construction in a remote part of the State of Negri Senibilan. These labourers were accustomed to the use of, and preferred, white rice; but more than six months previous to Dr. Fraser's visit beri-beri broke out among them, and was a serious source of invaliding and mortality. On the suggestion of Dr. Braddon parboiled rice was issued in place of white rice, and thereafter no cases of this disease occurred. Afterwards, however, without exception the labourers wished to resume the use of white rice, and, as the evidence was in no way conclusive that the continuous use of white rice as a staple article of diet caused beri-beri, it was decided to accede to the wishes of half the men, the other half continuing on parboiled rice. Apart from this change, no other alterations were made either in the dietetic or hygienic conditions. Eighty-seven days later beri-beri broke out among the members of the white rice party, and cases continued to occur among them until rice of the parboiled variety was substituted. No case occurred in the control party. The conditions were reversed, and the members of the party hitherto on parboiled rice received white rice, and vice versa. After a somewhat longer interval beri-beri broke out among the members of the party now on white rice, and no case occurred in the control party.

Here, then, the chain of evidence is complete, so far at least as the rice grown in the Malay States is concerned. Beri-beri is caused by the continuous consumption as the staple article of diet of rice from which the subpericarpal layers of the grain have been removed by polishing. In the case of parboiled rice the soaking and steaming to which the grain is subjected previous to milling renders the grain tough and semi-transparent; it cannot be made white, and as the subpericarpal layers are now difficult of removal, no great effort is made to accomplish this. There is abundant evidence to show that the Malays in their native villages do not suffer from beri-beri. They prepare their rice from similar grade to that from which the parboiled and white rices are prepared, but they employ primitive methods of pounding and winnowing. Examination of rice prepared in this way shows that the subpericarpal layers are removed to only a limited extent, and thus the freedom of Malays in their villages from beri-beri is easily explained.

These researches have shown why certain rices are associated with the occurrence of this disease, and as far as the Malay States are concerned the prevention of beri-beri can certainly be accomplished by the use of unpolished rice.

Experiments on the dieting of fowls were carried out to determine whether they were sensitive to a difference between parboiled and white rice. The fowls were confined in separate cages, five of them were fed on cooked parboiled rice and five on cooked white rice. All the fowls fed on white rice lost weight; three of them died in a few weeks, but the cause of death was not determined; one developed paralysis of the legs; the remaining fowl became weak, but did not suffer from paralysis. All the fowls fed on parboiled rice continued healthy. These results induced Dr. Fraser to carry out observations on a larger number of fowls, with the same results.

As a result of these experiments on men and fowls, Dr. Fraser considers that by further researches on the different varieties of rice, which he is at present carrying out, the causation of beri-beri may ultimately be determined.

Correspondence.

"EYE" IN SPORT.

SIR,—I will briefly reply to the interesting letters that have appeared on the above subject, but it would be quite impossible within the compass of a letter to deal with all the deep problems that arise. Mr. Walker evidently knew well what he was writing about. "Muscle sense," to which he and "Hands" allude, I included under "brain." It is, of course, one of the most important factors in making use of "eye" as well as for acquiring it. It is very true that the beginner cannot possess much "eye"; he can only have the potentiality of it to a greater or lesser extent, and this controls the degree of success which will attend his practice. Again, the potentiality of "eye" depends upon the quantity and quality of grey matter in those brain centres that are involved.

The boy who takes out his new gun and pots a squatting rabbit over a hedge can tell you at once what he did. He probably shut one eye, aligned the rabbit along the barrel with the master eye, and pulled the trigger, but the trained shot who has to do with varying distances and objects moving at different rates of speed has to develop another function, the product of both eyes, during which process the master eye's omnipotence sinks into unimportance, and the brain eye takes over the duties. And so compound a thing is this brain eye, that the trained shot cannot tell you, speaking generally, what he does when he shoots a driven partridge. That is briefly what I meant to convey in my lecture.

I had not missed the point that Mr. Walker's ruler and card experiment illustrates, but I had no time for details. It is only true of those who have no heterophoria; most people have some. The experiment, however, so far as it goes, illustrates my point as to the unimportance of the master eye in aiming, as compared with the influence of both. Mr. Green's point about his customer is not difficult of explanation. He asks what I should have done in such a case. In reply I refer him to my lecture. "It is above all things essential that a gun should be well fitted." The gentleman referred to during the ten years has got older, perhaps stouter, and his arms are less supple, and his gun did not fit him; when this was remedied—a point that Mr. Green recognizes—he again shot well. His "mental line of vision," his "subconscious feel," and, I trust, his "brain potentiality," are unaltered.

I hope shortly to go into this shooting question very much more fully in a small book on the subject, and, bearing in mind the points that have been raised, will give my explanation in greater detail.—I am, etc.,

London, W., Jan. 30th. ROBERT W. DOYNE.

SWABS LEFT IN THE INTESTINE.

SIR,—Although I cannot agree with the whole of Mr. Lynn Thomas's letter in the JOURNAL of January 28th, p. 229, I would join with him in congratulating Mr. Charles Ryall upon the issue of the recent trial. I took more than usual interest in the case, as Mr. Ryall learnt his rectal surgery with us at St. Mark's Hospital.

That he took the only course possible under the circumstances seems clear, for during the operation the lower part of the sigmoid colon sustained a tear of considerable length, and to prevent flooding of the pelvis by fluid intestinal contents he lightly plugged the bowel prior to suturing it.

Owing to the fact that the bowel was bound down by adhesions, had he endeavoured to clamp the gut above the lesion, it is probable that some faecal escape would have taken place with a possible fatal result.

If he had not been misled by the statement of the nurse "that the swab had passed," he might have taken one of two courses—namely, either have waited until the swab passed, as it did after many months, or have taken steps to remove it, after having allowed sufficient time for the wound in the intestine to heal.

The first step for removing a swab in this position, I take it, would be to locate it by means of the sigmoidoscope, and then to remove it by long forceps passed through a large, though short, Kelley's tube under the guidance of the eye and reflected light. In spite of the comments of Mr. Lynn Thomas on the dangers attending the use of the sigmoidoscope, I should not consider I was running the slightest risk by using this useful instrument, even if, owing to the fixation of the pelvic colon, success did not attend my efforts.

I was much interested in Mr. Lynn Thomas's statement that he had placed not only one but two swabs high up in the small intestine during the operation of gastro-enterostomy, and that he had seen Professor Roux do likewise. If swabs can be left with safety high up in the jejunum, surely they can be left with equal or greater safety low down in the large intestine—I am, etc.,

London, W., Jan. 30th. F. SWINFORD EDWARDS.

TRACHEOTOMY FOR DIPHTHERIA IN ISOLATION HOSPITALS.

SIR,—I was interested in a report in the JOURNAL of January 21st of an inquest that had been held on a child of 6 years, that died of laryngeal diphtheria, the operation of tracheotomy not having been performed. As medical superintendent of a small isolation hospital serving a population of about 80,000, mostly in colliery villages, I have had considerable experience of such cases. The parents usually do not call in the colliery surgeon until the child is pretty bad, with well-marked obstruction with cyanosis and restlessness. I very soon realized that it was unfair to expect the hard-working general practitioner to perform such an operation as tracheotomy in the small dwellings of the collier, and I adopted the following method: When the surgeons outside come across a case of laryngeal diphtheria they were asked to telephone or wire to me, or to the hospital matron, of the existence of such a case; the ambulance is immediately dispatched for the patient; in the meantime, preparation is made for tracheotomy, which is performed as soon as the child is admitted. Antitoxin is given before the child is taken off the table. The sanitary inspector is not called in until afterwards, when he is instructed to disinfect the house and make the usual inquiries. We have had about twenty such cases in the last four years, and not a single death. The hospital staff regard them as very interesting and satisfactory cases. I am inclined to think that it is a mistake to assume that any of these cases are hopeless. They do better than bad pharyngeal cases—I mean they are not so apt to be followed by heart failure.

It is true, as stated, that the primary object of isolation hospitals is the prevention of disease, but they have become something more than that. The amount of operation work done in our large fever hospitals must be very considerable, and a great many lives are saved every year.—I am, etc.,

D. LLEW. WILLIAMS,
M.O.H., Wrexham Rural District Council.

Wrexham, January 24th.

ALCOHOL AND DEGENERACY.

SIR,—I seriously doubt whether any profitable end can be served by this controversy, but you will perhaps spare me space for some comments on the extensive criticisms of Sir Victor Horsley, Dr. Mary Sturge, and Dr. Saleeby in your issue of January 14th.

In the first place, let me dismiss Dr. Saleeby before I deal with his colleagues. He quotes the words, "The stronger and more virile parents took alcohol, and because of their physique, not because of their alcohol, had healthier children" from my letter of January 7th, omitting the introductory words "the explanation we still believe to be valid is that," and states that with these words "one of the disputants has formally and generously, if unconsciously, thrown up the sponge."

The reader might imagine that we have here some new statement on my part.* The following sentences occur in our original memoir:

> The fact, as shown in these figures, that the children of the intemperate are healthier than the children of the sober, is probably due to the more virile and physically fit members of the community being liable to alcoholic temptation, and is as such an indirect effect of heredity, and not a result of alcohol (p. 11).

And again:

> There are fewer delicate children, and in a most marked way cases of tuberculosis and epilepsy are less frequent than among the children of sober parents. The source of this relation may be sought in two directions; the physically strongest in the community have probably the greatest capacity and taste for alcohol. . . . (p. 31).

Lastly:

> On the whole, the balance turns as often in favour of the alcoholic as of the non-alcoholic parentage. It is needless to say that we do not attribute this to the alcohol, but to certain physical and possibly mental characters which appear to be associated with a tendency to alcohol (p. 32).

Clearly, to adopt Dr. Saleeby's graceful analogy, we "threw up the sponge" in the original memoir. But if this be so, why has our critic not read it, and why all this excitement and invective flowing from its publication?

In the next place, Dr. Saleeby says that I "advocate the segregation of the inebriate on account of the probable mental defect of his offspring." I have, of course, made no such proposal at all. The authors of the memoir on *Extreme Alcoholism in Adults* draw attention to the fact that about 0.1 per cent. of the female population consist of *convicted* inebriates, and that 60 per cent. of these convicted inebriates are mentally defective. They believe that the alcoholism in these extreme cases is largely due to hereditary mental defect, and they urge—what? *Not* even "the segregation of all extreme cases of alcoholism, but the segregation of the mentally defectives" (p. 44). This segregation of the mentally defectives has always been urged by the Galton Eugenics Laboratory, and in advocating it in the case of the mentally defective *extreme* alcoholists, the authors of the memoir have merely given expression to an opinion they have long held and often uttered. Why, however, our critics should employ their energies in misquotation it is hard to imagine—the segregation of the *mentally defective* and *convicted* inebriate (average number of convictions 28) is far from being identical with the "segregation of inebriates," which Dr. Saleeby attributes to us.

Turning now to Sir Victor Horsley and Dr. Sturge, I am compelled to hold that they conceive that if they repeat a statement often enough and in strong enough language it will, of necessity, prove itself true. It may be that some persons who have not read our memoirs will eventually accept their statement, but that is not identical with demonstration of its truth. Under such circumstances discussion can lead to little of value, although reply may appear a necessity. Sir Victor Horsley accuses me of fabrication and dishonesty; the only charge I make against him is that his partisanship for a special theory has wholly destroyed his scientific balance. We must turn to antivivisection and antivaccination literature to match his invective and his misstatement.

I intend to reply to Dr. Sturge and Sir Victor's detailed charges once and for all in a forthcoming pamphlet.

* Speaking from personal experience of individual families, naturally a limited but not an unobservant one, I should certainly conclude that more athletic, active, and outdoor members—shortly, the more virile ones—consumed the more alcohol.

showing in parallel columns what Miss Elderton did and what our critics charge us with doing. But as that pamphlet may never reach some of your readers, I should like again to draw attention to the main features of this controversy, and illustrate in one or two special cases Dr. Sturge and Sir Victor's methods. Sir Victor belongs to that small group of temperance advocates who apparently believe that moderate and excessive uses of alcohol are identical in their results. They assert that any use of alcohol produces a toxic effect of a most serious kind on the offspring of parents using alcohol. Now, if there be any measurable *graded* effect at all, it must exist in a population more than a moiety of whom drink. We took such a population and divided it into two classes, one of which was reported by the most competent observers to be sober, and the other to drink more than was good for themselves or their homes. We found no *marked* differentiation in their offspring, physically or mentally. We did find a marked differential death-rate of their offspring. The one result is to be accepted because it coincides with Sir Victor and Dr. Sturge's *a priori* views, the other to be rejected because it does not. If there are any significant number of parents producing toxic effect on their offspring, mentally and physically, owing to their taking alcohol before the birth of the children, in which of the groups will they be found—the sober or the drinking class? That there has been very little change in the habits of the parents is demonstrated by the fact that the number of quite young children relative to all the children is practically the same in our sober and drinking sections. The only logical conclusion for Sir Victor and Dr. Sturge to draw is that all the parents did not begin drinking before the birth of their children. Then our results would have no bearing on the relative influence of sobriety and drinking upon the mentality and physique of the child. But such a conclusion would demonstrate again our point that mental dullness and feeble health in children are not the toxic effect of alcohol in the parents; for, in a population of 1,400 children with a majority of drinking parents, there would be no significant number who had started drinking before the birth of their offspring! The fact is, that the statement that Miss Elderton and I "had no knowledge whether the parental alcoholism began before the birth of their children or not" is pure quibble. I have several times asked Sir Victor Horsley for an explanation of why he has elsewhere cited with approval Dr. MacNicholl, and other authors, who have not ascertained this very point. He has given no answer to this question. As the second memoir of Miss Elderton and myself indicates, Sir Victor Horsley sets up a condition, which we do not accept as valid, in order to criticize our work, and tacitly drops it when he comes to bring evidence in favour of his own special views.

Sir Victor Horsley and Dr. Sturge reiterate various charges they have already made with regard to our wage statistics. Let me take *one* example only to illustrate their method. Others will be given later. We used a category of "Porters." Sir Victor and Dr. Sturge write as follows:

> To return now to the other kinds of porters—namely porters, coal porters, and street porters—we have them put together in a table below. Of porters thus grouped *we find only thirteen* in the Edinburgh statistics, and *no other porters are mentioned therein*. Professor Pearson, however, says there are seventeen. *He therefore has invented for this trade four imaginary individuals* though asserting throughout that he is quoting the Edinburgh figures. The Edinburgh Committee verified the wage rate, showed that for eleven individuals this could be done, and the average weekly wage came out at 20s. 6d. Of course, Professor Pearson to construct his wage (and sobriety) table for the *Times* and his supplemental memoir, *gives this average weekly wage to all his seventeen porters, the thirteen real ones and the four imaginary ones, in spite of the Edinburgh data.*[1]

The italics are mine. Now, what can any reader make of this statement but a direct charge of falsifying data by the introduction of *imaginary* instances not in the Edinburgh record?

What are the facts of the case? Why, that in graduating into trade classes between 600 and 700 individuals it is needful to group allied occupations together. A knowledge of the Registrar-General's *Instructions to the Clerks Employed in Classifying the Occupations and Ages of the People* would have taught Sir Victor Horsley that such grouping was absolutely necessary or we are left with a large number, perhaps a fifth of the total individuals, following by ones and twos isolated trades. Accordingly, we did what has been the custom of the Laboratory from its foundation, classified occupations according to the Registrar-General's grouping. The Registrar-General has a table on the *Effects of Alcoholic Excess*.[2] In this his Group 19 contains "Messenger, Porter, *etc.* (not Railway, etc.)." Please note the "etc.," for that group contains a number of small trades and occupations. His Order 6, Suborder 5, contains men engaged in "storage, porterage, and messages." The two *messengers* in the Edinburgh records, too few to form an isolated class, were naturally placed in this group, which was one the Registrar-General himself uses for "effects of alcoholic excess." There remain two more "imaginary porters," which Sir Victor Horsley states we have introduced. Will the reader appreciate the situation fully when we state that the table Sir Victor Horsley provided actually fails to give *two* porters' who appear in the *Report*, and that our group of seventeen porters consisted of the fifteen real porters who occur in the records and the two messengers, who were introduced on the authority of the Registrar-General's classification! It is worth remarking that this classification is also that of the Registrar-General for Scotland. Slips will, of course, occur in any tabulation of this kind, but the slip in this case as well as the strong language based upon it is Sir Victor Horsley's. The case of the masons cited by Sir Victor and Dr. Sturge is precisely parallel. The Registrar-General for Scotland puts together as men engaged in the building trade masons, bricklayers, builders, etc. "There were not 22 masons;" there were only 14. Sir Victor and Dr. Sturge assert that Professor Pearson

> has created eight imaginary masons and has bestowed on each of them an average weekly wage of 34s. 1d.[3]

It was quite open to Sir Victor Horsley to have found out what we had done. The trouble would have been small, as we work in the same building—instead of that he makes a general charge of fabricating data. All that has been done is to include the small section of bricklayers and one builder in this group. The whole are allied trades and treated as such in the Registrar-General's standard classification. This is the more justifiable because in Scotland the bricklayers form a relatively small but highly-paid trade.

Actual data for all the cases cited by Sir Victor and Dr. Sturge will be provided in the full reply which has been prepared. But the above cases show the reckless nature of their charges, which are as often as not due to error in their own extracts from the records, and in the remaining cases almost entirely due to our using a different, but standard classification of trades.

Next, Sir Victor Horsley and Dr. Sturge repeatedly assert that we have given the drinkers such and such average wages, insinuating that in finding the average wages of each of our two classes we have used the average wages recorded of the trade. This assertion is entirely false. The wages put against each trade were precisely what was stated—the average of *recorded* wages of the individuals following the trade. These wages were used only to obtain a rough classification of the grade of trade to meet Professor Marshall's view that the drinking section followed "low grade jobs." They were not found by us, but taken directly from the Edinburgh Report as a rough measure of the value of the trades in that locality.

The origin of this wage value of the trade is perfectly well known to Sir Victor and Dr. Sturge; we stated it ourselves. It is "the average of the *recorded* wages of individuals following that trade," and has nothing to do with sobriety or intemperance; it is a trade scale, and not a sobriety scale. Notwithstanding this, Sir Victor does not hesitate to say that we have credited a man in an asylum as earning 26s. 2d. a week. All we have done would be to infer that when in a state of sobriety he was able to follow a trade which ranks as a 26s. 2d. a week trade, and that this trade graduates his mentality and physique apart from alcohol. *No average wages of sober and drinking classes were obtained from these "trade wages" at all.*

[1] BRITISH MEDICAL JOURNAL, p. 81.

[2] *Supplement to the Fifty-sixth Annual Report*, Part I 1908, p. cix.

[3] BRITISH MEDICAL JOURNAL, p. 80.

In determining the wage-earning power of sober and drinking, we had before us, what we expressly state in our memoir, the wage power of the two classes *apart from alcohol*, as a test of their relative mentality and physique. We have repeatedly stated this, and yet Sir Victor repeatedly reasserts that we have made as a "chief generalization" the assertion of an economic equality of the sober and the alcoholic. Sir Victor and Dr. Sturge cite our conclusion from the wage data that

> On the whole, it seems reasonable to assume that the drinking parents are in physique and mentality the equal, on an average, of the sober, or possibly a little above their standard.

I am quite ready to abide by those words, subject to the qualifications stated in our memoirs—that is, that it is the physique and mentality of the workman, apart from his alcohol. What has this to do with "economic equality"? In our first memoir we stated:

> Clearly the general tendency of drink must, when it reaches a certain intensity, tend to lower a man's wages. (P. 4.)

And again, in the *Supplement*, p. 9, I fully emphasized that the drinkers, especially the bout drinkers, would be more often out of work and therefore have lower *average* wages.

Now, we have gone carefully through the wage data again to see whether our conclusions would be modified by other arrangement of the material. We find the previous results confirmed. We divided our workers into those (1) in regular work and not recently out of employment; (2) those in irregular work—that is, with periods out of employment; (3) those in irregular work and with average wages stated; (4) those following casual trades, painters, job-work, etc. The details of these are discussed in my contribution to the current number of the Royal Statistical Society's *Journal*. Roughly, we find, as we expected, that there is a higher percentage of the alcoholic in (3) and (4), but that the drinking men in these classes get *as high or higher wages than the sober*. In (1), where both classes are in regular employment, there is a shilling difference in wages and in the "average" wages class (2), a very small class, there is 2s. 6d. difference—a difference, as shown by classes (3) and (4), due to the alcoholic being more frequently out of employment. Our object is not to show that a man in a state of drink is economically equal to a sober man, but that apart from his alcohol he is not the inferior in mentality or physique of the sober, that is, that those who use alcohol and those who do not are initially of the same stock. If Sir Victor and Dr. Sturge succeed in showing that the wage-earning power of the alcoholic man is markedly lower than that of the sober man, apart from disabilities due to periods of alcoholic incapacity, they will find it absolutely impossible to investigate whether alcoholic and non-alcoholic are initially of the same stock. Without this equality any investigation of the effect of parental alcoholism on the offspring must be idle.

Sir Victor Horsley and Dr. Sturge state that we assert in the *Supplement* to our memoir that the average wage of the drinker is 25s. 6d. and of the temperate 25s. 5d. Verbally this is so, but they overlook the footnote to this sentence, where the exact meaning of the sentence is given. The statement was carelessly worded, but not so "carelessly" as the statement of the critics who disregard a footnote to the sentence giving the exact words of the original memoir. The wages of a "parent" are not the same as the wages of an individual workman, and the meaning of the word "parent" seems to be quite overlooked by Sir Victor.

I will now turn to other definite and numerical points wherein Sir Victor accuses us of bad faith and fabrication. In the first place, that of teetotalers. Sir Victor at first charged us with not separating out the teetotalers from the mass of the sober. The reply to that was given in our memoir—that is, that for the special statistical methods used they were too few to deal with separately. But they were separately *tabled*, and I indicated in my last letter that they were not differentiated from the sober by any marked improvement in the health or mentality of their children, and that accordingly there was in this respect no injustice done by adding them to what we termed the temperate section. At this point it is worth noticing that the Edinburgh Committee inquired most carefully in each case into the possibility of a history of drink, and as the Secretary informed us before Miss Elderton started her work, the absence of reference to drink meant that drinking did not exist, or that the inquirers, with the aid of police, employers, and district and church visitors, had been unable to find present or past evidence of it. Many, if not the majority, of the group "sober," may have been, and probably in the case of the women were, non-alcohol users.

Sir Victor first said we had not separated out the teetotalers; they are separated out in the tables of our memoir, which it was open to him to use; they are not separated in the deduction of correlation coefficients, but grouped with the sober, because for our statistical methods the professed teetotalers in Edinburgh, not the sober citizens, appear to be too few in number. We never said, as Sir Victor Horsley and Dr. Sturge put into our mouths, that the data as to teetotalers were "untrustworthy."[4] We believe them properly treated to be quite trustworthy, but insufficient in number to be treated as an independent item in finding correlation coefficients.

Sir Victor Horsley and Dr. Sturge's manner of dealing with the teetotaler group may be taken as a characteristic illustration of their treatment of our memoir. They take out nineteen men whom they say are referred to in the Edinburgh schedules as teetotalers, and then choose five out of them to comment on specially. Let us bear in mind that where there is no past history of drink stated the matter has been carefully inquired into, and no evidence for it or suspicion of it found. Now Sir Victor refers to these five cases in detail. Of No. 141 he says:

> He became a teetotaler after the first four of his children were born and before the remainder (five). Of these five, four appear in the schedule in detail. Of these four, the first child was born immediately after the father's teetotalism commenced. . . . In our opinion the father's parentage of these children was not, accurately speaking, a teetotal one, but an alcoholic one, in diminishing ratio.[5]

Our critics consider that a child born two and a half years after—what?—his father became a *strict* teetotaler—note the omission of the word strict—is born "immediately after the father's teetotalism commenced," and that the father's parentage is "an alcoholic one in diminishing ratio." There is *no history* of drink, but only the statement that two and a half years before the child's birth the father became a "*strict*" teetotaler. We have included him among the teetotalers, and, I think, rightly.

"No. 200 figures as a teetotaler," say Sir Victor and Dr. Sturge. Where? The inference is—in our tables. As we are directly told that he was still drunken in the *Report* itself, we included him among the drinking fathers.

"No. 147—who had become a teetotaler after his wife's death." Sir Victor insinuates that we have included him among the teetotalers; naturally he was put among the drinkers.

No. 530.—Sir Victor asserts that this man was a drinker because he is a teetotaler now; *no past history of drink* is given, but we entered him not as a teetotaler but as "sober." Sir Victor says of his wife, "drank at least during child-bearing period." The actual description gives no history of drink in the case of the father. Wife began to make free with drink at one time, but took pledge and is all right. "Nice family," "good workman; rent always paid up to date." Entered by us under "mother only drinks," although this is scarcely justifiable. Sir Victor's statement that she "drank at least during the child-bearing period" is still more unjustifiable.

No. 621.—"This man only became a teetotaler after the birth of his two children." The insinuation is that we have included him. There is no past history of drink in his case, but his wife is suspected of drink. We put him among the sober, not the teetotalers, and his wife among the drinkers.[6]

On the basis of these cases, concerning several of which and of others in their table our critics, as we shall show elsewhere, make gross blunders,[7] they proceed to accuse us of saving "time and trouble" by "dispensing with individual analysis." Of the 5 special cases selected by

[4] BRITISH MEDICAL JOURNAL, p. 112.

[5] BRITISH MEDICAL JOURNAL, p. 75.

[6] It was open to Sir Victor and Doctor Sturge to see from our tables that we had used fourteen and not nineteen teetotal fathers.

[7] Take this illustration of their method: the records say "a nice family, the man teetotal and steady at his work, the wife not teetotal, but never seen the worse for drink; the home is a comfortable one." This is paraphrased by Sir Victor: "*Habits of Wife*: Drinks, but not seen to be drunk." I contend that only fanaticism could convert the above description into what is really a libellous account of a probably quite steady woman.

them, only 1 appears among our teetotal fathers, No. 141, and we believe he appears justifiably. In the case of 6 out of the 19 cases Sir Victor states that there was "no evidence" of the habits of the wife, although we had directly ascertained from the Secretary before beginning our inquiry that absence of statement meant sobriety, no past history of drink being discoverable. The humour of the situation is that we never claimed to do more than separate our population into sober and drinking groups, and lately asked our critics to say in which of those two groups they expect to find the parents, if any, who were non-alcoholic at the time of the conception of their children; the internal evidence of the statistics shows that there cannot have been a great change during the life of the children, or the alcoholic group would have, which they have not, relatively older children.

As still a further illustration of our critics' methods, allow me to take the following statement from our memoir:

> Some of this excess of child deaths is certainly due to accident, to overlaying, to burns, and to other causes arising from carelessness, but we should be inclined to attribute it at least in part to the same causes probably to want of home care, to food defects, perhaps, to other factors possibly toxic, which also show themselves in slightly less height and weight among the children of the drinking mothers when these children reach a school age. (Page 27.)

Sir Victor Horsley and Dr. Sturge say that this attribution of the greater mortality-rate of the offspring of alcoholic mothers in considerable part to accident and *negligence* is incompatible with certain statistics they profess themselves to provide for *accidents* in Edinburgh. The statements they say are from the police; but the only reliable data are in the Registrar-General for Scotland's *Reports*. We give the results below, merely remarking that what we need are an excess of about ten deaths per year in the offspring of the alcoholic mothers from *all* the causes (not *accidents* alone) that we have enumerated:

Horsley and Sturge's Assertion.—During the last seventeen years the number of accidental deaths among children under *fourteen* years of age show an average number of 17 per annum; of those occurring below 6 years of age, and resulting from burns, scalds, suffocation, there appear to be 5 to 6 yearly.

Actual Data.	10 years, 1890-99.	9 years, 1900-08.
Average annual total deaths due to accident and negligence of children under *ten* years	57.4	59.1
Children under *six* years due to suffocation—annual average	31.5	28.2
Children under *six* years due to burns and scalds	8.0	10.1

Many of the other tabled deaths due to accidents or negligence, for example, falls, fractures, poisons, vehicles (in case at least of children not more than 5 years of age), are extremely likely to occur with the alcoholic rather than the sober mothers, especially when we remember that our *Memoir* shows that the children of the alcoholic parents spend more time in the streets. Further comment on Sir Victor Horsley's five to six deaths per annum in Edinburgh as the result of parental negligence seems unnecessary.

Another illustration [8] may lastly be taken from Sir Victor Horsley and Dr. Sturge's section dealing with our treatment of acuity of vision, refraction, and eye disease. What did we find with regard to the relation of parental alcoholism to these characters in their children? Why, that the influence is so *insignificant* that it would require families by the thousand, instead of by the hundred, to demonstrate that it existed at all. It has, therefore, no social importance. But what do Sir Victor and Dr. Sturge do? They cite several paragraphs from our memoir which emphasize the insignificance of the relationship as if this was identical with badness of the material! Any trained statistician knows that 6,000 cases might demonstrate that in two differentiated groups 59 per cent. and 58 per cent. of the individuals suffered from a particular defect, but 600 cases would only show that the difference was insignificant, without measuring the exact amount of the insignificance.

[8] The detailed reply to Sir Victor's numbers will appear in a pamphlet just going to press, but I have illustrated, in recent letters to the *Times*, how absurd are the charges of fabrication he raises.

I do not intend here to trouble you further with detailed reply to each individual charge made by Sir Victor Horsley and Dr. Sturge; that they will find in my forthcoming pamphlet. But those who wish to see exactly what we have done with the wage data, and what a parody of that treatment Sir Victor Horsley has made—he directly accuses us with allotting average trade wages to individual workmen—"constructive misrepresentation of the facts"—will find the matter discussed in the current number of the *Journal of the Royal Statistical Society*. I can only say that the man who deliberately asserts that we have "*imagined*" (italics his own) porters, that he and his colleague have themselves omitted, appears to me the more guilty of "constructive misrepresentation of the facts." We took our data out with reasonable caution and care, but with no intention of making a personal charge against anybody. The question is not whether slips have been made here or there, but whether they are sufficient to invalidate in the least our general conclusions. Sir Victor Horsley and Dr. Sturge have extracted data in order to make personal charges which amount not to charges of faulty logic or even of stupidity, but to those of fabrication—"creating statistics where real data did not exist"—in short, to dishonesty. They therefore ought to have been peculiarly cautious as to the absolute accuracy of their own statements. They have failed in this accuracy, and accordingly their charges will ultimately recoil on their own heads and create a widespread distrust of the arguments used by such temperance advocates.—I am, etc.,

KARL PEARSON.

Biometric Laboratory, University College, Jan. 18th.

SIR,—It is well known that a controversy has taken place between Professor Karl Pearson and Sir Victor Horsley on the part played by alcohol in the production of feeble-mindedness in the offspring of drinkers.

In the Memoirs X and XI of the Eugenics Laboratory Miss Elderton and Professor Karl Pearson used material collected chiefly by the late Dr. Ashby, and now in the possession of the Manchester Education Committee.

Of this material, which consisted of case-papers relating to children examined by Dr. Ashby with a view to determine whether they were suitable for admission to the Manchester special schools, I made an exact transcript, which, with the consent of the authority, I transmitted to Professor Pearson.

Sir Victor Horsley has, in your columns, called this material "Miss Dendy's private notes," although I have explained that it is the entire and unaltered material, and not my own notes at all; at the same time he asks me to publish it.

It is not within my power to publish these cases, which are the property of the Education Department, but Sir Victor Horsley can probably have access to all the original papers by applying to the Director of Elementary Education, Deansgate, Manchester. I have little or no doubt that every assistance will be given to him in examining the original documents, and I shall be ready to give him an opportunity of comparing my transcript with the originals.—I am, etc.,

MARY DENDY,

Honorary Secretary, the Incorporated Lancashire and Cheshire Society for the Permanent Care of the Feeble-minded.

Manchester, Jan. 25th.

APPENDICITIS IN SPAIN.

SIR,—In the BRITISH MEDICAL JOURNAL of December 31st, 1910, page 2010, I read with true surprise, in the information of Dr. Bryden Glendining on "Appendicitis in Spain," that the infirmity is very rare in our country, to such a point that in Madrid, during the whole of the last year not more than 7 cases were reported, and attributing this to the vegetarian diet predominating, etc. In San Sebastian, a town of 45,000 inhabitants, in the same period of time 11 cases have been operated on, according to data communicated by Drs. Huici and Ramoneda (2 and 9 respectively). Desirous of knowing if this disproportion between the capital and the province was real or apparent, I requested my friend Dr. Goyanes, of the Hospital General of Madrid, to furnish me with

a report of the cases of appendicitis operated on during that period, and from his report it appears that among 450 surgical interventions practised in his wards he has operated on 8 cases of appendicitis, and among his private *clientèle* on 4, having attended 4 cases more that were not operated on. It is necessary to bear in mind that Dr. Goyanes is not the only surgeon of the Hospital General, and that in Madrid there are many other hospitals.

Appendicitis in Spain is perhaps as frequent as in other countries, but it is more seldom operated on than in other lands; the *early operation* is never made by Spanish surgeons, and in the acute period they only operate when there is a vital indication or abscess; to operate they wait almost always until the patient has had more than two attacks. All this tends to the effect that the number of cases operated on gives a remote idea of the frequency of the affection; thus, of the 24 cases that I have treated in San Sebastian in the last years, only 8 have been operated on.—I am, etc.,

San Sebastian, Jan. 29th. L. URRUTIA.

STATE SICKNESS AND INVALIDITY INSURANCE.

SIR,—Referring to the letter of Dr. R. C. Buist in the BRITISH MEDICAL JOURNAL of November 5th, 1910, and those of others, on the subject of a national medical service, contract practice, etc., is it not time that something in the way of union and limiting the numbers of the profession were inaugurated? Unless the proposed national service was based on army and navy lines—with good pay, leave of absence, and pension, it would soon become intolerable. Regarding other professional drawbacks, as the members of the profession in Austria, Belgium, France, and Germany have recently won so many skirmishes with their opponents, how is it that we cannot do the same thing? We might follow their example, or that of the Branch in New South Wales, instead of always being defeated by the unpatriotic individualism which so far has defeated the charter and shown up our want of organization and power of sticking together.

But the best useful auxiliaries would be to educate the intending student and his parents on the great fallacy of "doctors always make money," and the newly qualified practitioner, with a little knowledge of business and loyalty to his cloth. The long intervals in sending in professional accounts should also be done away with.—I am, etc.,

Ayr, Australia, Dec. 14th, 1910. J. BOOTH-CLARKSON.

A correspondent submitted through us to "Festina Lente" the following questions:

1. Did the doctor have any assistant or did he do all the visiting himself?
2. His account of visits—are they those based on the 1,200 to 1,300 workmen *only*?
3. Did he not have any other outside doctor visiting any of the parcel of 5,000 he mentions? If yes, how can he determine his own *clientèle* and what was the actual number?
4. Were all the 5,000 in clubs with full right to call doctor where and as often as beneficiary desired without being liable for any additional fee for such services?

"Festina Lente" has sent the following replies:

1. I always keep an experienced assistant who shares the visiting. During his summer holidays or other absences I have no difficulty in doing the work myself.
2. My visits included those made to workmen and their families, and to tradesmen and others attended as private patients.
3. Other doctors pay occasional visits, but they are not so frequent nor so many as to make any appreciable difference in the percentage. Moreover, they are counterbalanced by the fact that my figures include my visits to outlying districts not included in the population stated.
4. Colliery workmen are not considered by us as "club" patien ts, nor attended as such, although the attendance is by contra ct. The workmen and their families and dependants have a right to call on the doctor when and as often as they wish, and there is no additional payment made for any service of any kind. My figures show that this right is not much abused. Of course I consider 20 a day in August last under the average, and for the corresponding period in 1909 the visiting averaged 30 a day. From April 30th to October 31st, 1910, the longest week was for that ending July 3rd, when the visits were 232, or 33 per day. I have gone more carefully into the question of population, and it may be safely taken as a little over 4,000.

THE CANCER PROBLEM.

SIR,—The discussion on appendicitis which has been going on for some time has, we think, notwithstanding Dr. C. Mercier's facetious remarks regarding the dense and impenetrable state of the brains of those who took part in it, been a fruitful one. In the first place, we have learnt a great deal about the geographical distribution of the disease, from practitioners practising both at home and abroad, and its comparative infrequency in India. The presumption seems to be that this infrequency is related to the dietetic habits of the people where there is a low consumption of animal food. Some writers have laid stress upon the natural mode of defaecation as being a prophylactic against appendicitis, and we presume that Dr. Mercier places that idea in the same category as wigs and alcohol so far as the causation of the disease is concerned.

Now, it is only fair that observations such as these should receive respectful consideration. Indeed, everything that tends to bring about a physiological state of the alimentary canal must naturally tend to obviate disease, whether it be appendicitis or any other disease.

We regret that no one has challenged the statement, made in a previous letter, that persons who are the victims of habitual constipation are not liable to appendicitis. Our object in again intruding on your valuable space is to suggest that practitioners at home and abroad will furnish us with their observations or notions regarding the prevalence of cancer, more particularly as regards its distribution and what they imagine to be the predisposing or exciting causes; and also, in this connexion, its relation to damp and clay soils, to lowlying districts, and to places situated on elevated tablelands, because we suppose that nowadays no one believes that any disease of the body is generated there *de novo* and is not imported from without the organism.

It is of moment to note whether cancer is prevalent amongst vegetarians or the reverse; or in other words whether it is probable that the infection reaches the body through flesh foods.

We think that there can be little doubt that the babe at the breast is singularly free from malignant growth, as it is also free from tuberculous diseases.

Then, again, we wish to know the prevalence of sarcoma and carcinoma in the different races of mankind as well as their geographical distribution.

Dr. Bashford's tables, founded on *post-mortem* reports from various hospitals, show clearly that sarcoma is a disease of early life and not of advanced age, whereas carcinoma is most frequent after 40 years of age. Indeed, the incidence of sarcoma is very much like the incidence of tuberculosis, and we wish to know whether those who see much of sarcoma find it frequent in the tuberculous stock which we believe it to be, and are supported in this belief by some very experienced practitioners. In other words, we are inclined to the belief that the cause of sarcoma and carcinoma is probably the same, the difference being in the constitution of the patient in which the tumour grows. We have been told recently that a carcinomatous growth has become actually a sarcoma in its evolution.

Further, there are certain organs in the body that are comparatively immune to malignant growths. In this respect the spleen is a striking example. In Bright's memoir on *Abdominal Tumours* not more than one or two cases of malignant growth in the spleen are cited.

Furthermore, malignant growths differ from other growths in that it is not the size of them that kills the patient, but a gradual deterioration of the blood, which must come from some toxin developed in the tumour, and therefore the presumption is that a parasite is at work, whether it be the actual cancer cell itself or otherwise.

We conceive that information from all parts on this and kindred matters would do much to narrow down the scope of the inquiry as to the actual conditions of life that bring about malignant growths.

Huxley expressed it tersely when he wrote that pathology is the "etiology, the morphology, and the distribution of abnormal life."—I am, etc.,

JOHN T. MACLACHLAN, M.D.
Glasgow, Jan. 21st. E. WARDMAN-WILBOURNE, L.R.C.P.

THE BRADSHAW LECTURE ON CANCER.

SIR,—I frankly admit that Mr. F. W. Wright has caught me with regard to the priority of Hanau over Morau. I must also express my gratitude to him for having disregarded the unnecessary "e" I gave to Morau. It must have been as obvious to Dr. Bashford, who pointed it out, as it was to him, that this was a slip, for I could not have given the two references I did unless I had had the name before me.

I am sorry that I have not been able to make my object in writing clear to Mr. Wright. I would, in all friendliness, suggest to him that the impression conveyed to any one who read his letter of December 24th, 1910, must necessarily have been that the staff of the Imperial Cancer Research Fund had originated the particular lines of research and made the discoveries referred to in it. I said "that practically all the instances he quotes were of the nature of confirmation of the work of others," and respecting this statement Dr. Bashford's letter piles Pelion on my Ossa. With regard to recent work in cancer research, a large portion of the medical profession is in a position but little better than the lay public. For some time the reports and criticisms of the subject in the lay press, and frequently also in the medical press, have conveyed the impression that I have suggested is conveyed by Mr. Wright's letter. I quite agree with him that the value of work is not necessarily diminished because it is confirmatory and not original, and that often the claim of priority is of minor importance. But why did Mr. Wright write as he did in reply to Mr. Campbell's letter? Surely, because he felt that an unjust impression with regard to the value of the work of the Imperial Cancer Research Fund was likely to be caused by it. I feel that at present, in connexion with cancer research, a false impression is being created—an impression, by the way, which cannot in the end redound to the credit of the Imperial Cancer Research Fund. I do not think Mr. Wright believes that discovery and confirmation deserve equal credit, though confirmation is frequently of very great value.

With regard to Dr. Bashford's letter, I may say that I have only just come to Glasgow, and all the literature to which I have access at present consists of my own books and MS. notes. However, I do not offer this as an excuse for any omissions I may have made, though with regard to Ehrlich I stated that I quoted from memory. On the whole, Dr. Bashford's letter simply emphasizes my general statement, and I only complain of the unfair manner in which he has dealt with what I wrote.

Mr. Wright said in his letter of December 24th, "That most recent achievement, the patient tracing of the evolution of a carcinoma into a mixed tumour first and then into round-celled sarcoma in the second place." I quoted this, showing most clearly that it was a quotation with which I did not agree. Dr. Bashford quotes it again, but as coming from me. He even includes a real quotation from my letter in the same sentence, tacking the two together and making them appear as a quotation from the same original passage. He then proceeds to criticize the whole. I quoted these words, applied by Mr. Wright to the staff of the Imperial Cancer Research Fund, only to emphasize the fact that it was Ehrlich who had first discovered that an artificially propagated carcinoma (in mice) might develop into a sarcoma, and I should have thought this was obvious. When, therefore, Dr. Bashford implies that I made a mistake by calling what was a spindle-celled a round-celled sarcoma, he makes a suggestion which is inaccurate.

Dr. Bashford says that this discovery was accidental. Are not all scientific discoveries of any importance accidental to some extent in the same sense as this one? Is the observation of an unexpected phenomenon when conducting an investigation an accidental discovery? If so, some of Newton's discoveries were accidents due to his having happened to be watching when an apple fell. But Dr. Bashford and others subsequently traced the details of this change from carcinoma to sarcoma. In this they deserve the greatest credit for a tedious piece of work, but none at all for originality.

Of the latter part of Dr. Bashford's paragraph, which deals not too generously with this discovery, I must candidly confess I have failed to make sense. I have a vague impression that Dr. Bashford means to imply that though it was discovered in Ehrlich's laboratory that carcinoma artificially propagated in mice might develop into sarcoma, the explanation of this phenomenon had already been supplied in detail by himself and those working under him. If this is is really the case, we have an instance of prophetic power of inestimable value—or of a mere accident.

Leaving the rest of Dr. Bashford's letter without troubling you with other examples of his methods of criticism, may I be allowed to ask him a question? In his last report he stated he is able to cure animals suffering from well established transplanted tumours.[1] He gives no reference to accounts of the experiments upon which this statement is based. To all who are working at the problems connected with cancer any methods by which this can be accomplished must be of the greatest interest and importance, and I, as one of these, should be glad to know where the experiments have been described, and what the animals were.—I am, etc.,

CHARLES WALKER.

Research Department, Glasgow Cancer Hospital, Jan. 15th.

SIR,—Mr. Kenneth Campbell in the JOURNAL of January 21st cites a supposititious case of "a carcinoma of the breast," asking me at the same time certain questions as to the light which the workers at the Cancer Research Laboratories have been able to throw upon certain points in connexion with that case, thus: (*a*) "What hidden force is it which lashes the epithelial cells into such unwonted reproductive activity?" and (*b*) "What is the nature of the continuous irritant (and this must be postulated) operating on each individual cell in the growing portions of both the primary and secondary tumours?" As these two questions are practically identical, I think that an answer to one would be equally applicable to the other. I will therefore take them together. But before doing so I would suggest, with great diffidence and respect, that neither of these questions is pertinent to the subject under discussion. For the "hidden force" and the "nature of the continuous irritant"—one and the same thing, I think—is just that which all the world is seeking in the highly respectable company of the inquirers at the Cancer Research Laboratories. I submit, therefore, that we are not justified in demanding from any body of research students direct answers to questions the solution of which is still *sub judice*, and in bringing their labours into ridicule because they themselves have not yet compassed that solution. I submit again that this question as to the "hidden force" and the "nature of the continuous irritant operating" put forward by Mr. Campbell is an ultimate pathological fact in the present state of our knowledge, and there, for the present, we must be content to leave it. It appears to me that it would be quite as reasonable to ask what is the nature of positive or negative chemiotaxis, of that force which gives to "every seed its own body," and determines the aggregation of atoms into tangible masses. The only possible reply to such questions would obviously be the power of attraction, of repulsion, of selection, and so on. But little comfort should we be able to gather from such an illogical circle as that. Unhappily, what we know about the origin and growth of a carcinoma, whether of the breast or of any other organ, is that it has arisen in a cell, that the division of this cell has added to itself, as a response or reaction, others of the same character; and continues to add, until the conglomerate mass thus formed threatens the processes of healthy tissue at different points and in different organs. Of the *nature* of the hidden force which has originated, and is carrying on, all this we do not know with certainty whether it is of a chemical, a biochemical, or a vital force, whatever the latter term may mean. It might, perchance, help us if we were to invoke the assistance of the side-chain theory of Ehrlich. Has the metabolism of a molecule of the original cell been faulty? Is there any suspicion that the conversion of the active *toxin* of the toxophore group has been converted into the less active but not less powerful *toxoid* whose more torpid influence is answerable for the slowness of growth of the disease?

Be this as it may—and the questions are, perhaps, simply speculative—the fact remains that we cannot

[1] Imperial Cancer Research Fund. Eighth Annual Report, p. 13, lines 24 to 30.

postulate anything definite as to the nature of the hidden force which originates a carcinoma; the only thing we can postulate being our ignorance of it. But happily there is a lighter side to this gloomy picture, for I think that therapeusis really does offer a fair field in which to expect fruitful results, and therapeusis is not always obliged to wait upon etiology. We have only to recall to our remembrance the case of small-pox, about which our knowledge is quite as meagre as it is about cancer, and yet the disease is now in all countries but the shadow of a memory; or that of rabies. Do we know anything about the nature of that hidden force which lies in the infinitesimal dose of the saliva of the rabid animal injected beneath the human skin, and fraught with such fatal consequences to the recipient of that dose? Is it a micro-organism, or a virus, or a chemical, or bio-chemical agent; or is it a katabolic product of a cell molecule? What do we know of the cause? and are we called upon to suspend our work upon therapeutic measures for its relief as long as our ignorance of the cause continues?

Yes, we have "hints," to use Mr. Campbell's term, of both prevention and cure, certainly in some lower mammals; which hints I myself am applying to the human mammal.—I am, etc.,

Kensington, W., Jan. 22nd. FREDK. W. WRIGHT.

INDUCED DIVISION OF HUMAN LYMPHOCYTES.

SIR,—I read with interest the letter on the above subject by Dr. Ronald Ross in the BRITISH MEDICAL JOURNAL of January 21st.

I have for a number of years believed (from personal observations) that lymphocytes and red blood cells have the power of dividing, and first observed this while investigating certain specimens of urine. Then I thought they were some form of amoeba, and I should like to quote from notes I made in 1903:

The urine contained a few leucocytes, no pus cells, a few bacilli urinale, and a number of round organisms, which were amoeboid. These organisms moved by a twisting of the whole body, and were about 1 μ in diameter. They appeared as a clear vesicle with a small central spot. Larger bodies about the size and with the appearance of a lymphocyte could be observed after careful search, which also had the power of movement and appeared to multiply by budding. A knoblike constriction appeared at one part of the cell, which gradually became detached and showed rapid movement during the process. This process was repeated at different parts of the cell, with the same result. The larger of these organisms I believe to be the mother cell, the smaller daughter cells.

I watched this phenomenon for hours at a time, and had repeatedly to shift the slide to keep the "organism" *in situ*. I, however, by examining fresh blood films, realized that I was in error as to their nature, for I found in these films a similar process in certain cells, and exhibiting the figure of eight constriction and certain other processes, as described by Dr. Ross. I am unable to confirm certain other appearances, for I have always examined films unstained, as I found when I attempted to stain that movement ceased. A similar process takes place in red blood cells, and I believe that certain microcytes are the result of division of these cells.

In certain anaemias—secondary anaemia and pernicious anaemia—red cells have the power of movement and, I believe, propagation. The pear-shaped cells move by the protrusion or elongation of part of their substance (like a pseudopod), and this gives rise to the shape. The pseudopod in time detaches itself and becomes a free-swimming organism.

This process with the division of the corpuscle explains the different sized corpuscles seen in anaemias, and I believe such processes are acts of propagation, and are natural ones against resistance. The resistance is probably some alteration in the chemical composition of the plasma. I have observed similar and other processes in red and white cells in urine, pus, and lymph, and should like to refer Dr. Ross to an article I contributed to the BRITISH MEDICAL JOURNAL in 1907, on Observations on Fresh Blood Films, but which I unfortunately had to curtail. I have not read *Induced Cell Reproduction and Cancer*, by Dr. H. C. Ross, but I believe that cell reproduction in cancer is a manifestation that Nature is attempting to overcome resistance, just as arterio-sclerosis is cell proliferation on the part of the vessels to overcome resistance in the blood stream. Further, I believe that the cancer problem is not bacteriological or cytological, but is mainly chemical, and the cytological element is the manifestation. To make this statement more clear, I should say that cancer is not caused by one agent alone. That certain toxins produced from micro-organisms or within the body, through some fault in tissue metabolism, will act as an irritant and cause cell reproduction in individuals whose tissues are susceptible.

The following case is suggestive: Ten years ago I first attended a lady, aged 31 years (a married nullipara), who was suffering from a painful swelling of the right breast. She was full-breasted, well-nourished, and suffered from these attacks at least twice yearly. I treated these attacks as rheumatic, and they subsided under certain remedies. The swelling was probably a cell proliferation in the ducts to overcome a certain toxin circulating there. I had not seen this patient for seven years till a month ago, when I found an extensive carcinoma of the right breast, which has been removed.—I am, etc.,

Edinburgh, Jan. 23rd. FREDERICK PORTER, M.B.

Public Health AND POOR LAW MEDICAL SERVICES.

POOR LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.

A COUNCIL meeting of this association was held at 34, Copthall Avenue, E.C., on January 20th; the chair was taken by Surgeon-General Evatt, C.B., president of the association. The following matters, among others, came before the council:

The honorary secretary submitted a letter from a provincial member asking for advice under the following circumstances: He had been appointed medical officer to a certain district with a permanent tenure of office, but had inadvertently moved out of his district by a few hundred yards. He hoped that he would have no difficulty in getting re elected periodically when his term of office periodically expired. In this, however, he was disappointed, for he had lately had notice that he would not be re-elected at the expiry of his present term of office. The council were of opinion that it was very unwise to act in this manner. By so doing this officer had placed himself entirely in the hands of the guardians, and must lose his office, unless he could induce his guardians to re-elect him. It could not be too strongly impressed on district medical officers, that they could only have security of tenure in their office throughout the country generally so long as they resided in their districts.

A letter was read from another member complaining that his guardians had objected to a surgery he had constructed adjoining his house, on the ground that it was not built of brick and roofed with slate, although they had permitted the use of similar surgeries by other medical officers in the union. The council considered that this was a matter for the sanitary authority, and if the latter saw no objection to the construction of the surgery, the guardians had no right to object.

Another letter was read from a country member 65 years of age, who stated that he held a second Poor Law district outside his own union, and after holding it for eleven years, he was now called upon to resign it. He asked whether he could claim any pension on account of it without resigning his other Poor Law appointments, as he had had deductions from his salary for this appointment? The council considered that he should resign all his appointments and take his pension on the whole if he wished to insure himself against loss, as he was not entitled to any pension so long as he held any Poor Law appointment.

A letter was also read from another member dealing with the same point, but in this case he had not reached the age for retiring, and had held the outside appointment for thirteen years. In this case it appeared that the officer would be bound to forfeit all his deductions of salary under the Superannuation Act, unless he could retire within the next four years, as only the average salary during the last *five* years could be estimated in fixing the pension. The council thought this very inequitable. That such an appointment ought always to be allowed for in reckoning the retiring pension, or that at least the officer should be entitled to claim a return of all deductions from the salary of that appointment for superannuation purposes.

Another country member wrote that the guardians of his union had issued a circular stating that they had decided the present salaries of the medical officers should be fixed as a "maximum" for their appointment. He asked whether the guardians could fix such a "maximum," and if it were legal for the district medical officers of a union to contract out of the special fees for operations, etc., laid down by the General Order of 1847. The council were of opinion that in neither case would this be legal, unless with the consent of the Local Government Board.

The honorary secretary reported that he and the other delegates of the association had been present at the first meeting of the Poor Law Conference held at Norfolk House on December 9th last. It had there been decided that each section of the Poor Law service should formulate through its respective association what reforms it considered necessary for the betterment of its particular service. He had forwarded to the conference all the resolutions that had been duly passed up to the present, but he thought it desirable that the various points of medical Poor Law reform should be put forward in more detail, especially as a Departmental Committee had been appointed by the Local Government Board to revise the General Orders. After careful consideration the council decided that the following recommendations should be put forward on behalf of the Poor Law medical officers of England and Wales.

1. That the provisions of the Metropolitan Dispensaries' Order, as far as possible, should be made to apply to the country generally, and that all appliances and drugs for the use of State patients shall in all cases be provided at the expense of the State.
2. That there should be a revision of the scale of payments for operations, and more facilities granted for obtaining assistance, and paying for the same. This specially applied to the provision of an anaesthetist. The medical officer should not be at the mercy of the Poor Law authority with regard to this assistance. It should be left entirely in his hands, with only some reasonable check to prevent abuse.
3. In all cases where called in to attend a confinement in his official capacity he should have an inalienable right to his fee. If the case be an improper one from a Poor Law point of view, the authority should be left to recover payment from the husband.
4. The Poor Law authority should be compelled to contract with the workhouse medical officer or superintendent of infirmary to vaccinate all infants in the workhouse or infirmary, and to carry out the Vaccination Acts generally.
5. The notification of measles and whooping-cough should be carried out in the same manner as has been recently adopted in the case of tuberculosis of the lungs.
6. The salaries of Poor Law medical officers should be on a more liberal scale, due regard being taken of the average mileage in the case of visits to sick patients. That to meet exigencies of changes of population, the medical officer should always have a right to claim a revision of his salary when his work has been greatly increased by such change.
7. That an allowance should be made by the Poor Law authority for the carrying out of the Poor Law work of a medical officer during his annual holiday and during sickness.
8. That length of service, as in other public services, should constitute a ground for increase of salary, apart from other considerations.
9. That a common fund be instituted to receive all payments under the Poor Law Officers' Superannuation Act, so that the expense of pensions should not directly fall on a particular locality.
10. That in all cases where for public reasons the office of a Poor Law medical officer is determined, if he or she be not entitled to a pension, an allowance shall be made of a sum equal to the average emoluments derived from that office during the period of two years. Provided always that such determination be not due to misconduct on the part of the officer.
11. That in no cases shall it be lawful for the local Poor Law authority, by bargaining with individual medical officers, to reduce the amount paid at any time annually in medical salaries for attendance on its poor, unless it can be clearly shown that, owing to local changes, the sickness claims have very materially diminished in that area.
12. That in all cases where, owing to residence outside his district, a medical officer has only been appointed for a year, or a term of years, if the said appointment has been continued for a period of seven or more years, the said medical officer shall thereafter be entitled to hold office on the same terms as if he resided in his district.

The council directed that these recommendations should be submitted to the Conjoint Poor Law Conference at the meeting to be held that night at Norfolk House.

EXTRA FEES FOR SPECIAL SURGICAL OPERATIONS.

E. W. A., a district medical officer, writes that he has charged his board of guardians a guinea for operating on a pauper patient with hydrocele, and has been informed by the clerk that as this operation is not one which by Article 177 of the Consolidated Poor Order carries any extra fee, he is not entitled to be paid extra in respect of it. He asks how he can recover the fee charged.

*** The clerk to the guardians was right in the opinion he gave, but notwithstanding this, if our correspondent can succeed in getting a resolution passed by the guardians to the effect that they wish this claim to be paid and a copy of this resolution is then forwarded to the Local Government Board with a request for it to be sanctioned, *it is highly probable* that formal sanction for such payment will be given. Should this be the case the auditor will then pass the claim. Our correspondent will find useful information relating to the duties of Poor Law medical officers in Churchill's *Medical Directory* for 1911, pages 20-21.

Universities and Colleges.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary quarterly comitia was held at the College on Thursday, January 26th, the President, Sir Thomas Barlow, in the chair.

Lectureships.

Dr. Theodore Williams was appointed Harveian Orator for 1911, Dr. Graham Steell Bradshaw Lecturer for 1911, and Dr. F. A. Bainbridge Milroy Lecturer for 1912.

Membership.

The following gentlemen were admitted Members of the College:

John Hay Burgess, M.D.Lond., L.R.C.P., Capt. I.M.S.; Lancelot Stephen Topham Burrell, M.B.Camb., L.R.C.P.; Frank Clayton, M.B.Camb., L.R.C.P.; David McCay, M.B.Roy.Univ.Irel., Capt. I.M.S.; Bidhan Chandra Roy, M.D.Calcutta, L.R.C.P.; Ernest Edwin Waters, M.D.Edin., Major I.M.S.

Licences.

The Licence of the College was granted to seventy-five gentlemen.

Diplomas in Public Health.

In conjunction with the Royal College of Surgeons, Diplomas in Public Health were granted to the following gentlemen:

S. C. Adam, M.B., Ch.B., Glasg. and Durh.; C. J. E. Bennett, L.R.C.P., M.R.C.S., Westminster and King's Coll.; H. Boulton, M.B., B.C.Camb., L.R.C.P., M.R.C.S., Major, I.M.S., St. Bart's and Royal Army Med. Coll.; H. M. Brown, M.D., Ch.B., Edin. and Royal Inst. of Public Health; P. N. Cave, M.B., B.Ch., Oxford, St. George's and St. Mary's; R. A. Clapham, M.D., B.C.Camb., L.R.C.P., M.R.C.S., Lond.; A. Dawson, M.B., Ch.B. Aberd., Captain, Royal Army Med. Coll., R.A.M.C.; K. C. Dube, L.M.and S., Punjab, Univ. Coll., Lond.; J. H. Jones, L.R.C.P., M.R.C.S., Guy's, Haslar, and King's Coll.; *Miss C. A. King, M.B., B.S.Lond., Royal Free and Middlesex; J. F. Martin, M.B., Ch.B.Edin., Captain, R.A.M.C., Edin.; L. Pick, L.R.C.P., M.R.C.S., St. George's and Royal Inst. of Public Health; A. M. Pryce, M.B., Ch.B.Edin., Univ. Coll.; T. E. Pryce, M.D., B.S. Lond., Univ. Coll.; N. E. H. Scott, M.B., Ch.B.Glas., Univ. Coll., Lond.; S. F. S. Steadman, L.R.C.P., M.R.C.S., Char. Cross and Univ. Coll.; S. J. Steward, M.D., B.C.Camb., L.R.C.P., M.R.C.S., St. Thomas's and Univ. Coll.; C. H. Straton, L.R.C.P., M.R.C.S., St. Mary's and Royal Army Med. Coll., Captain, R.A.M.C.; *Miss May Thompson, L.R.C.P.and S.Edin., L.F.P.and S., Glasgow, Edinburgh School of Med. for Women; S. A. Tucker, M.B., B.S. Lond., L.R.C.P., M.R.C.S., St. Bart's and Univ. Coll.; C. W. Vining, M.B., B.S.Lond., St. Mary's and St. George's.

* Under the Medical Act, 1876, 39 and 40 Vict., cap. xli.

Communications.

The following communications were received:

1. From the Secretary of the Royal College of Surgeons, reporting proceedings of the Council of that College on December 8th, 1910, and January 12th.
2. From the Director-General of the Medical Department of the Navy, reporting the award of Sir Gilbert Blane's Medals to Fleet Surgeons G. T. Collingwood, M.V.O., and A. R Bankart.
3. From the Assistant Secretary to the Marine Department, Board of Trade, inviting the College to nominate a representative on a committee for revising the scales of medicines, etc., for merchant ships. Dr. Tirard was appointed.
4. From Mr. Alfred Parsons, asking permission to have a reproduction made of the late Dr. Payne's portrait.
5. From Professor Osler, on behalf of Dr. Harvey Cushing, asking permission to have the portrait of Vesalius photographed. Both these requests were granted, subject to the usual restrictions.
6. From the University of St. Andrews, inviting the College to send a delegate to the celebration of the five hundredth anniversary of the University in September next. On the motion of the Senior Censor, seconded by the Second Censor, the President, Sir Thomas Barlow, was appointed to represent the College.
7. From the Royal Sanitary Institute, inviting the College to send delegates to their congress at Belfast in July next. Lord Ilkeston was appointed.
8. From the British Medical Association, concerning diseases of the eye as a compulsory subject for the curriculum and examination. The matter was referred to the Committee of Management to consider and report to the College.

Council.

Lord Ilkeston, Sir H. Bryan Donkin, and Drs. R. Caton and J. Phillips were elected councillors in the room of Drs. Herman, Finlay, Tirard, and Herringham, who retired by rotation.

Queen Victoria's Jubilee Institute for Nurses.

Sir Dyce Duckworth was re-elected as the representative of the College on Queen Victoria's Jubilee Institute for Nurses.

Central Midwives Board.

Sir Francis Champneys was re-elected as the representative of the College on the Central Midwives Board.

Library.

Books and other publications presented to the Library during the past quarter were received, and thanks returned to the donors. Special mention was made of gifts by Drs. Crawfurd, Osler, and Ormerod, and by Mr. Fleming.

Examinations for the Licence.

The annual return by the examiners of the results of the examinations for the licence in the year 1910 was received.

Obituary.

GEORGE BIRT, M.B.Lond, M.R.C.S, L.S.A.,

FORMERLY OF STOURBRIDGE.

We regret to announce the death, which occurred at Teignmouth on January 25th, of Mr. G. Birt, the second son of the late Dr. T. Birt of Leamington, at the age of 64. He matriculated at the London University, and entered the Birmingham Medical School. He obtained the Diplomas of M.R.C.S. and L.S.A. in 1868. After being Resident on the surgical side of the General Hospital, Birmingham, he continued his studies at University College, and graduated in medicine at the University of London, gaining honours in anatomy and organic chemistry. He settled in Stourbridge, and up to the time of his retirement was engaged in a large and widespread general practice in that district. He held the post of Honorary Surgeon to the Stourbridge Dispensary. His strenuous life, which did not permit of relaxation, recreation, or even an annual holiday, began to imprint its mark in 1903. Glycosuria and signs of arterio-sclerosis made their appearance. With dogged perseverance and courage he continued work, ignoring all danger signals. At length in 1908 the incessant strain, unrelieved by rest, overcame him. He retired to Teignmouth an invalid. Two months ago cardiac compensation broke down, hydrothorax developed and required frequent paracentesis. Uraemia closed the scene. He married, in 1877, the daughter of the late Dr. Campbell of Stourbridge, by whom he is survived. He leaves a son and two daughters. He was a member of the British Medical Association for forty-three years.

Lieutenant-Colonel John Adams Cunningham, M.D., of the Indian Medical Service, died of cholera on December 31st, after a few hours' illness. His death occurred at Calcutta where he was spending the Christmas holidays. Lieutenant-Colonel Cunningham, who was 52 years of age, joined the Bengal Medical Department as Surgeon, April 1st, 1881, and became Lieutenant-Colonel, January 17th, 1901. He served in the campaign on the North-West Frontier of India in 1897–8 with the Tirah Expedition, receiving a medal with clasp. Latterly he held several civil surgeoncies, and has served as Superintendent of the Lunatic Asylum at Lahore, as Professor at the Government Colleges, and as Professor at Lahore Medical College. He was also Medical Officer of the Punjab Light Horse Volunteers and of the North-Western Railway Volunteers.

Croydon has recently lost another of its most distinguished and respected townsmen in the person of Dr. Parsons Smith. For a long time he had been in very indifferent health and had consequently been compelled to curtail his professional work. At the time of his death he was a J.P.; he had held for some years the Chairmanship of the School Board; in that capacity he did excellent service and anticipated by several years the plan of inspection more recently formulated in the interests of elementary school children, and, indeed, on his advice was the first oculist ever appointed to a school board. With characteristic foresight he made it distinctly understood that the officer appointed should exercise all possible tact and discharge his duties so as not to inflict any unnecessary hardships on the profession or on parents. The result met with general approval. Dr. Parsons Smith was an Irishman by birth and belonged to one of the best Irish families. He was singularly unobtrusive and so transparently genuine, sympathetic, and courtly, that to know him was to respect and trust him, and the long obituary notices in the local papers of every political and religious creed afford striking evidence of the high regard in which he was so justly held. He was attended through his illness by his partner, Mr. Gervase Newby, F.R.C.S.Eng.

The Services.

INDIAN MEDICAL SERVICE.

The following candidates were successful at the recent examination for fourteen commissions, for which there were twenty-one candidates:

	Marks.		Marks.
Scott, J.	3691	Brook, G. S.	3203
Alexander, A. R. S.	3502	Goss, E. S.	3118
Hay, F. W.	3362	Morgan, J. F. H.	3111
Singh, I.	3357	Pandalai, K. G.	3105
Hepworth, S. M.	3284	Sen, J. L.	3035
Cormack, H. S.	3240	Wood, C. A.	3012
Tate, G.	3203	Connellan, P. J.	2914

TERRITORIAL FORCE.

Scottish Command Lectures.

The fourth of the series of special lectures for officers and non-commissioned officers will be given in the headquarters of the R.A.M.C. (Glasgow units), on February 7th, at 8.45 p.m., when Major J. P. Silver, R.A.M.C., will deal with the subject of "Improvization of Transport for Medical Units." This is one of the Scottish Command lectures delivered in Edinburgh Military Hospital, and as all medical officers are invited to attend, an opportunity is thus afforded to Glasgow and district officers to hear the special lectures organized for the regular officers of the R.A.M.C. in the Scottish Command.

The fifth and last lecture will be given in the same place on March 7th, when Colonel Gordon Hall, R.A.M.C., will take up the subject of "Tactics for Medical Units." This also forms one of the special series for the Scottish Command.

Glasgow Units, R.A.M.C.(T.F.).

The annual gathering of the Glasgow Units, Royal Army Medical Corps, Territorial Force, took place on the evening of January 23rd in St. Andrew's Hall, Glasgow. During an interval, Colonel Sir George T. Beatson, K.C.B., Administrative Medical Officer, Lowland Division, presented the prizes to the winning members of the five units, Mounted Brigade Field Ambulance, 1st and 2nd Lowland Field Ambulances, and 3rd and 4th Scottish Hospitals. He congratulated the units on being practically at full strength as the small shortage of nineteen men due to retirals would be made up when the drill season began. The new drill hall had now been sanctioned by the War Office, a site had been secured and plans passed, and he hoped that the new building would be got ready as soon as possible. A staff officer had also been appointed for the Lowland Division. Sir George also referred to the work of the Scottish Branch of the British Red Cross Society in providing a number of voluntary aid detachments to fill the gap at present existing in the Territorial Medical Service, between the field units and the base hospitals. Glasgow was now taking steps for active work in connexion with the formation of detachments for the County and the City, and he was sure that success would attend the efforts now being made.

Medico-Legal.

SPIRITS OF NITRE.

Judgement has been given by the stipendiary magistrate in a prosecution by the inspector appointed by the local authority to administer the Sale of Food and Drugs Act against a Glasgow doctor. The charge was that on November 15th, 1910, in the dispensary carried on by him, he sold, by the hands of an assistant, 3 oz. of sweet spirit of nitre which contained only 1.38 per cent. of ethyl nitrite, whereas the *British Pharmacopoeia* prescribes that it should be at least 1.75 per cent. The accused was defended by Mr. William Findlay on behalf of the Medical and Dental Defence Union of Scotland, who pleaded that the purchaser was not prejudiced, that there was no absolute standard under the *Pharmacopoeia*, and that it did not state clearly the composition of the article. The evidence led for the accused was to the effect that spirit of nitre is extremely volatile, and evaporation takes place even with the utmost care. The stipendiary magistrate found the respondent not guilty.

ACTION FOR ALLEGED MEDICAL NEGLIGENCE.

In the Bow County Court on January 20th, before Judge Smyly, James John Darkins, a clerk, of Milton Avenue, East Ham, sued Dr. H. de B. Nelson, of Canning Town, for negligence. Mr. Medcalfe appeared for the plaintiff, and Mr. Matthew, on behalf of the London and Counties Medical Protection Society, for the defendant. Mr. Medcalfe said that the case was a serious one, involving the character and reputation of a medical man, but there was no desire on the part of the plaintiff to obtain damages for himself. He simply wanted the recoupment of extra expenses, amounting to between £40 and £50, caused, it was alleged, by the negligence of the defendant. During her confinement in March last the plaintiff's wife was attended by Dr. Nelson, and it was alleged that he left behind pieces of the placenta. After several attacks of haemorrhage an operation was performed by Dr. Kennedy. Septic poisoning set in, and she died early in May. The alle-

gation was that the defendant was negligent in his attendance and also in his treatment, consequent on which the plaintiff was involved in extra expense in engaging doctors, nurses, etc. The plaintiff gave evidence in support of his counsel's statement. His Honour, in summing up, directed the attention of the jury to a letter written by the plaintiff after his wife's death, in which he appealed to the generosity of the defendant to enable him to meet the debts which had been incurred in consequence of the illness. They had to say whether that was a letter which one man would write to another whom he believed to have been the cause of his wife's death. The jury, after a lengthy hearing, returned a verdict for the defendant. Judgement was given accordingly, with costs.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

THE OBLIGATIONS OF A SUBSTITUTE.

KAPPA.—A. attends Mrs. C. as substitute for B. on being informed that B. is away and that the case is urgent. Before leaving, C. asks him to continue in attendance, saying that B. has neglected her, and that in any case she would not send for B. again. Would A. be wrong in continuing the case, of course stipulating that B. is first informed?

*** If A. acted as a substitute for B. at B.'s request, he ought under no circumstances to take the case, but if he was called in by C. in B.'s absence, and without any request from B. or his representatives, the case would be different; but A. must ensure that Mrs. C. first definitely terminates B.'s relations with her as her medical attendant.

SUPERSESSION.

KAPPA.—A. and B. are in practice in the same neighbourhood, B. is asked by C., a wealthy local employer of labour, to attend his employees, their wives, and families at his—that is C.'s—cost. Many of them are already patients of A., and do not wish to change their doctor. Is B. ethically wrong in doing this without informing A.?

*** B. should tell C. that, while willing to attend any of his employees and their families who wish to consult him, he would not like any pressure put upon them to induce them to leave A., as by the offer of their medical attendance being paid for them, and that in any case he could not attend any of A.'s patients, unless they voluntarily gave up A.'s services and inform him of the fact. It would be better if A. and B. could be associated in the work, and the employees allowed to choose their medical adviser.

Medical News.

MR. E. HURRY FENWICK will deliver a lecture on a method of the accurate measurements of the movements of the human kidney before operation and its bearing on renal surgery at the London Hospital on February 7th at 1 p.m.

AT the meeting of the Royal Society on Thursday next Dr. V. H. Veley, F.R.S., and Dr. W. L. Symes will read papers on Certain Physical and Physiological Properties of Stovaine and its Homologues, and on The Effect of some Local Anaesthetics on Nerve.

THE title of the Dermatological Society recently formed in London is the New London Dermatological Society.

THE annual dinner of the West London Medico-Chirurgical Society will be held at the Wharncliffe Rooms, Hotel Great Central, Marylebone Road, N.W., on February 22nd.

BY a gift of £4,500 by Mr. Ralph C. Forster, the sum of £25,000 required for the purchase of the site of the new chemical laboratories for University College, London, has been completed.

THE Gresham Professor of Physic, Dr. F. M. Sandwith, will give four lectures on Plague at the City of London School, Victoria Embankment, on February 14th, 15th, 16th, and 17th.

THE charter day dinner of the Royal College of Surgeons in Ireland will take place on Saturday, February 11th. His Excellency the Lord Lieutenant has accepted the invitation of the President and Fellows to be present at the dinner.

DR. W. T. GRENFELL, C.M.G., superintendent of the Labrador Medical Mission of the Royal Mission for Deep Sea Fishermen, will give a lecture entitled "Midst Ice and Snow in Labrador," at the Queen's Hall, London, on Monday next, at 8.30 p.m. The lecture will be illustrated by lantern slides, and the chair will be taken by Sir Ernest Shackleton. Tickets can be obtained at the Queen's Hall box office or through the usual agents.

DR. AUGUSTUS W. DALBY of Frome, who has had at a comparatively early age to relinquish his practice on account of the effects of a serious illness, was on Friday, January 27th, the recipient of a handsome testimonial. It was subscribed for mainly by the townsfolk of Frome and neighbourhood, but reinforced by several of the members of the Trowbridge Division and friends throughout the Bath and Bristol Branch of the Association. The testimonial consisted of an illuminated address of sympathy and appreciation of his work in Frome, together with a cheque for £290.

MOST motorists whose cars are not fitted with detachable wheels carry a spare wheel as the readiest remedy for a puncture on the road, and hitherto the Stepney wheel has held the field. But when a tyre has been on for some time the application of the Stepney wheel may be a troublesome, dirty, and difficult operation, as it involves separating the bead of the tyre from the rim in order to admit the clips. The Hall spare wheel does away with this difficulty, as it clips sideways on the exterior and interior beads of the metal rim, and does not involve any manipulation of the tyre; it is much easier to apply single handed. Moreover, it can be put on when there has been no puncture so as to act as a non-skid, and its attachment is perfectly secure.

THE trustees of the Carnegie Hero Fund met at Dunfermline last week, and had under consideration an act of heroism displayed during the attack upon the house in Sidney Street, Stepney, in which certain anarchists had taken refuge. The trustees awarded to Dr. N. Johnstone a medallion and a sum of £25. Dr. Johnstone, who was acting as assistant to Dr. J. W. Fordham, of Mile End Road, was called to attend Detective Sergeant Leeson, who had been shot in Sidney Street; while firing was going on he had to climb over the roofs of outbuildings to where Leeson was lying on a couch in a room. The wounded man was got on to a stretcher and was being lifted along the coping when the party drew fire, and a bullet hit the wall very near Dr. Johnstone's face. The party succeeded in accomplishing their task without loss, and Leeson was safely removed to the London Hospital.

THE usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on January 20th, Dr. de Havilland Hall in the chair. As is usual at the first meeting of the year, the Committee received special reports on the chronic cases, those members who are drawing sick pay, and of whom there is little hope that any will ever be able to resume professional work. There are now nearly fifty such cases, and the amount of sick pay disbursed to them is nearly £100 a week. This sick pay is payable without any deduction until the age of 65. The Committee has always considered this branch of the work as one of the most important features of the society's operations, and the letters received from the recipients of these annuities show clearly what an immense boon these pensions has been to them. At each quinquennial valuation of the business of the society a large extra reserve is made for the chronic cases. Prospectuses and all further particulars on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

A Tuberculin Dispensary League has been established in oorder that a system of tuberculin dispensaries for the poor may be placed upon its trial. It is estimated that 40,000 persons in London alone suffer from consumption and cannot for or obtain treatment in sanatoriums, which can only deal with about 10,000 cases a year at a cost of about £30,000. The president of the league is the Countess of Mayo; the chairman of the executive committee is Dr. Camac Wilkinson. The committee appeals for £500 a year for three years in order that a preliminary trial may be made. For that sum 200, it is estimated, could be treated every year. The honorary treasurer of the league is Mrs. Creasy, 36, Weymouth Street, W., and the honorary secretary Mrs. Steuart Erskine, 10, Ovington Gardens, S.W. The chief dispensary at 263, Kennington Road, S.E., near the Westminster Bridge Road station of the Baker Street and Waterloo Tube, is open on Tuesdays and Fridays from 9 to 12.

Letters, Notes, and Answers.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Attiology, London*. The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

W. H. G. asks for the experience of others in the treatment of coryza by vaccines, both as regards results and methods.

ADEN asks for a cure for small warts on the face and head. They are long and vascular. He has tried nitric acid and other things, but they grow again.

NORTHUMBRIAN wishes for information as to the prospects of obtaining (*a*) temporary employment and (*b*) a country practice in Australia or New Zealand, and as to the most likely district to make for.

ANSWERS.

THROMBOSIS AND ULCERATION AFTER TYPHOID FEVER.

ENQUIRER would be glad of suggestions for treatment in the following case: A man aged 30 had enteric fever sixteen years ago, followed by severe femoral thrombosis in the right leg and less severely in the left. Under treatment, this gradually subsided, but he has since been subject to recurring attacks of inflammation of the superficial veins of both legs, and of the lower abdominal wall. The veins remain inflamed for a few days, but gradually subside with rest, the vein usually becoming patent, though several hard cords in each leg represent obliterated veins from past attacks. With these attacks small ulcers form, which are very slow in healing, and will not heal at all under local treatment without rest in bed. He has had many drugs, including calcium chloride, calcium and potassium iodides, ichthyol, iron, thiosinamine injections, salicylates, and intestinal antiseptics. No local infective area can be found in mouth or elsewhere. A very severe attack of erysipelas in the legs a year ago seemed for a time to check the disease, but recently it has recurred. He has had also massage, bandages, and spa treatment; but no serum treatment has been given. Calcium salts have always aggravated matters; and the use of pancreatic extracts, as suggested in such cases, has been useless. There is no positive Widal reaction.

TRANSIENT ALBUMINURIA.

KINKS would be glad if any reader would suggest a diagnosis in the following case: On January 13th I was summoned in the evening to see a highly neurotic young woman, aged 26. I found her looking extremely ill and anxious, with respirations of forty to the minute, and with a normal temperature and pulse. Finding nothing to account for the condition in the chest, I examined the urine, despite the fact that it was normal in appearance and quantity, and found it to contain at least half albumen. I administered diuretics, and ordered hot blankets and water bottles. In the morning I found the respirations increased to 46, and the pulse was imperceptible at the wrist. At 4 the same afternoon, as she had passed no urine since the previous evening, I passed a catheter and drew off 2 drachms. This was nearly solid with albumen, and contained granular casts. The case seemed quite hopeless, as the pulse was still imperceptible. At 9 p.m. the pulse improved, and I was able to try a hot-air bath. After this, although she continued to pass only a few ounces of urine a day, she gradually improved, and on January 20th the albumen and all other dangerous symptoms had disappeared.

LETTERS, NOTES, ETC.

THE plan of offering to medical men appointments as district medical referees seems to commend itself to the promoters of certain new insurance companies. In several cases that have been brought to our notice this offer has been made on the condition that the medical men so appointed shall take up a certain number of shares. It appears, therefore, that the medical man is invited to become a shareholder, and those so approached will doubtless examine the terms of the prospectus with the same care as the prospectus of any other commercial company.

SOUR MILK TREATMENT IN DISEASE.

DR. THOMAS DUTTON (London, W.) writes: Referring to my letter in the JOURNAL some time since on the above subject, it may interest members to learn that my further practical clinical experience shows there is not the slightest virtue in the treatment. It produces rheumatism and gout in those prone to either complaint, and in the form of cheese it produces jaundice and congestion of the liver without rendering the intestines antiseptic; in fact, I have better results by administering 1 drop of carbolic acid in a wineglassful of water twice daily for prolonged period.

MEDICAL TREATMENT OF INOPERABLE CANCER.

DR. ALEXANDER HAIG (London) writes: May I point out to Dr. J. Inglis Parsons that before he can draw the conclusion "that the vegetarian is more liable to cancer than the meat-eater" (JOURNAL, p. 180), he must know the proportion of vegetarians to meat-eaters in the population from which these cases were drawn. It may interest him to know that Dr. Braithwaite, in his pamphlet on *Salt as a Possible Cause of Cancer* (J. and A. Churchill, London, 1902), refers to these very same statistics, but draws the opposite conclusion. Thus he says (p. 25): "As the immense majority of the population is vegetarian, this shows a greater incidence of the disease among meat-eaters." Dr. Braithwaite also says on the same page: "The almost purely vegetarian natives of India are subject to cancer." But from the uric acid point of view, this fact admits of easy explanation, as these vegetarian natives are regular consumers of pulses, which contain, roughly, twice as much uric acid as meat. Fortunately for them, however, their pulses only amount to some 4 per cent. of their solid food, which consists chiefly of rice and other harmless vegetable substances; while xanthin-containing foods form more than 30 per cent. of the solid food of meat-eaters in this country, not to mention tea, coffee, chocolate and cocoa, which often account for the introduction of further large quantities of xanthin.

In reply to Dr. William Donovan (JOURNAL, p. 180), I may say that the uric-acid-free diet is that on which I live, and the essential point is that it contains neither uric acid nor any other substance (for example, xanthin) capable of conversion into uric acid in the metabolism of the body. On this diet my daily turnover of uric acid is under 10 gr., while, on the above-mentioned meat-eaters' diet, it used to be over 20 gr.; and this just suffices to make all the difference between health and disease. I believe also that it will one day be proved that this same food factor makes all the difference between cancer, which is now increasing *pari passu* with our still increasing consumption of uric acid, and little or no cancer at all. But cancer does not vary with meat-eating only, but with the total intake of uric acid.

KANGRI-BURN EPITHELIOMA.

DR. GEO. CARRINGTON PURVIS (136, Dhurrumtolla Street, Calcutta) writes: In the JOURNAL of December 3rd, 1910, I notice a letter on the above subject from Dr. Ernest Neve, of Kashmir, who has come to the conclusion that the production of epithelioma suggests a non-parasitic cause, because it (epithelioma) can be produced by such widely differing agents as arsenic, *x* rays, heat, soot, lime, etc. Now, all these agents are capable of producing great irritation of the epithelial cells, and all of us, I think, are agreed that irritation—especially long-continued irritation—is one of the chief causes in the production of cancer in general and epithelioma in particular; but surely one can go further than this and maintain that this very irritation and consequent enfeeblement of the epithelial cells render them particularly liable to the invasion of certain organisms or parasites. It has been shown that certain fungi can enter vegetable cells and then lose their identity—that is, become unrecognizable under the highest powers of the microscope; and if such can take place with vegetable cells, then why not with animal cells, especially when the latter have been enfeebled and altered by long-continued irritation? Last winter I sent some microscopic preparations to Edinburgh. These were shown at a meeting of the Scottish Microscopical Society. The preparations were of epithelioma and scirrhus (human), and all these showed fungi growths—spores and mycelium. The mycelium looked very like ordinary white fibrous tissues, and the spores stained equally well with both *basic* and *acid* dyes, and had the spores not occurred in clumps, would have been mistaken for nuclei or connective tissue corpuscles. The proof that they were fungi was shown by their character and mode of growth on agar. No bacteria were obtained from these tumours. Further, the fungi were not ordinary moulds, and the growth from the scirrhus was ribbon-like and semi-transparent. The final test whether these fungoid growths could reproduce the tumours in the human subject was, of course, not attempted. I shall be pleased to let Dr. Neve see the sections of these growths if he will write to me at the address given in this letter.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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A whole column	2	13	4
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NOTE.—It is against the rules of the Post Office to receive *poste Restante* letters addressed either in initials or numbers.